Examining the Roles of Multiple Stakeholders in Dam-forced Resettlement of Ethnic Minorities in Vietnam

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I. EXECUTIVE SUMMARY

Infrastructure construction, land acquisition and other types of development across the developing world are increasingly displacing local residents, and in most cases affected people suffer at least short-term impoverishment. Despite favorable legislation and safeguards to lesson risks, it is difficult for many displaced residents to recover their previous livelihoods and living conditions due to loss of land, homes, jobs, and access to natural resources; food insecurity; heightened morbidity; economic marginalization and the loss of social ties.

In order to understand more about the process and challenges facing adaptation after resettlement and to identify approaches that promise improved outcomes, the author conducted research during 10 field visits from 2011 to 2014 to two adjacent ethnic minority communities in an upland region of Quang Nam province in central Vietnam that were resettled due to construction of a hydropower dam. From household surveys, focus group discussions and semi-structured interviews it was learned that residents' limited participation in resettlement decision-making was a contributing factor in the construction of inappropriate housing and in resettlement in sites that were vulnerable to disaster risks. It was also determined that the major impediments to restoring livelihoods and food security were the lack of productive land and constricted access to forests and fisheries.

A community capitals approach based on a sustainable livelihoods framework was applied to obtain a more nuanced understanding of the impacts of displacement, yielding the following findings: The resettled ethnic minority communities benefited from improved physical capital in terms of electricity, a school, roads and other infrastructure, and they maintained robust social and cultural capital, as they operationalized indigenous skills to improve their received housing and to collectively build and maintain a traditional community house, which became a focal point of each village. However, due to weak human and natural capital they could not respond successfully to displacement by diversifying crops, practicing new skills and livelihoods, or migrating for employment. Furthermore, due to the lack of sufficient arable land the residents burned protected forest land for conversion to swidden fields, leading to increased deforestation. The hydropower authority provided insufficient compensation and poor quality housing and livelihood training by the local government was inadequate in enabling residents to diversify income sources.

These inherent limitations of the displaced communities and the local government underscored a compelling need for the involvement and expertise of external stakeholders. The latter chapters of the thesis explore the potential benefits that can be obtained by including a variety of stakeholders in resettlement, including the hydropower authority; international financial institutions (IFIs) such as the Asian Development Bank; domestic non-governmental organizations; lake basin management committees; and university centers for development assistance.

Given that displacement, with its impoverishing effects, violates the UN-mandated right of all citizens to benefit equitably from development, the main financial beneficiaries of a hydropower dam project, particularly the dam authority that profits from hydropower generation, bear a clear ethical responsibility to share some of these benefits with affected populations. The Vietnamese government has endorsed the concept of benefit-sharing with new legislation that mandates a tax on hydropower generation, with part of the tax revenues accruing to resettled residents in return for their maintaining and monitoring forests in the reservoir catchment area. Implementation of this payment for forest ecosystem services (PFES) scheme in the research area was the subject of analysis here. It was found that the program reduced the occurrence of illegal logging and provided a sustainable revenue stream that allowed residents to equal or slightly exceed pre-displacement average household income, although it failed to substantially increase human capital or provide sufficient income to lift most households above the poverty line.

Visits to a project conducted by the Asian Development Bank (ADB) on resettlement of Co-tu communities in neighboring Nam Giang district offered promise that an influential international financial institution like ADB, which adheres to strict involuntary displacement safeguards, can secure ample financial compensation, transparency and participation in resettlement planning and gender empowerment. However, due to an inherent power asymmetry and varying project objectives there may be misunderstanding between residents, IFIs and local government, with residents not obtaining the productive land or access to natural resources that they most desire.

In an integrated lake basin management approach, inclusive reservoir committees can ensure that project benefits are shared with residents and that residents have a say in how reservoir water and surrounding land are used. This may include offering free electrification, irrigation or water supplies to resettled communities or allowing access to the dam reservoir for fishing, aquaculture or practicing agriculture on drawdown land. Besides electricity, these benefits have not yet been offered to the resettled residents at the research site, it was found, so this is a clear area of potential improvement.

Finally, an expanding civil society in Vietnam is providing new opportunities for inclusion of new types of stakeholders in dam projects who can advocate and negotiate with local government on behalf of affected populations. Vietnamese non-governmental organizations, for example, can identify unused productive forest land that can be reallocated to the residents for tree plantations, and can negotiate to ensure that land use rights can be provided to increase residents' financial sustainability. University development centers can share their agricultural expertise with residents and can leverage their personal networks with government officials to advocate on behalf of resettled communities.

The author concludes that, particularly for marginalized ethnic minorities, a mechanism should be institutionalized throughout the developing world that would allow multiple stakeholders to play roles in

resettlement planning from the start of a hydropower dam project, to ensure that project-affected populations can also become beneficiaries of development.

Key words: Displacement, resettlement, Vietnam, hydropower dams, community resilience, benefit-sharing mechanisms, civil society organizations

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V. ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
APs	Affected populations
CSO	Civil society organization
CSRD	Center for Social Research and Development
DFDR	Development-forced displacement and resettlement
DPs	Displaced persons
EIA	Environmental impact assessment
ESIA	Environmental and social impact assessment
EVN	Electricity of Vietnam
FPMU	Forest Protection Management Unit
GDP	Gross domestic product
HH	Household
ICOLD	International Commission on Large Dams
IFI	International financial institutions
IGO	Intergovernmental organization
ILBM	Integrated lake basin management
INGO	International non-governmental organization
IRR Model	Impoverishment Risk and Reconstruction Model
IUCN	International Union for Conservation of Nature
KwH	Kilowatt hours
MW	Megawatts
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Natural Resources
MOIT	Ministry of Industry and Trade
NGO	Non-governmental organization
OECD	Organization for Economic Cooperation and Development
PES	Payment for environmental services
RAP	Resettlement action plans
REMDP	Resettlement and ethnic minority development plan
SLA	Sustainable Livelihoods Approach
VND	Vietnam dong
VUSTA	Vietnam Union of Science and Technological Associations
WCD	World Commission on Dams

CHAPTER 1: INTRODUCTION

This chapter explicates many of the main themes of this thesis, starting with an overview of information and concerns related to hydropower dam construction. Displacement caused by hydropower dams and other kind of development is the next focus of this chapter, with a description of the effects, ethical issues, theoretical frameworks, and countermeasures that have been proposed to ameliorate adverse impacts. Then the focus will turn to Vietnam, with an outline of climatic and topographical conditions, a brief introduction to history and government, an explanation of the role of hydropower in fuelling development, and an overview of Vietnamese ethnic minorities, with a detailed description of the Co-tu minority group. The chapter concludes with information on the research site in central Vietnam.

1.1 Hydropower dams: Trends, impacts and implications

The history of dams spans centuries, with the first known recorded dam a masonry structure constructed in approximately 2900 BC in Kosheish, Egypt (E&T Group, n.d.). Dams may be run-of-river types without storage reservoirs or reservoir-type dams that impound water behind the dam for storage and river regulation (World Commission on Dams, 2000). They can serve multiple functions: control of seasonal or storm-induced flooding, control of sedimentation, for irrigation, for drinking water, for recreational use and for hydroelectric generation. More than one-third of all dams are multifunctional, with impounded water used for both irrigation and hydropower, for example. Approximately half of all the world's single-use large dams are constructed for irrigation (ICOLD, n.d.), with hydropower the next most common function, as seen in Figure 1.1:

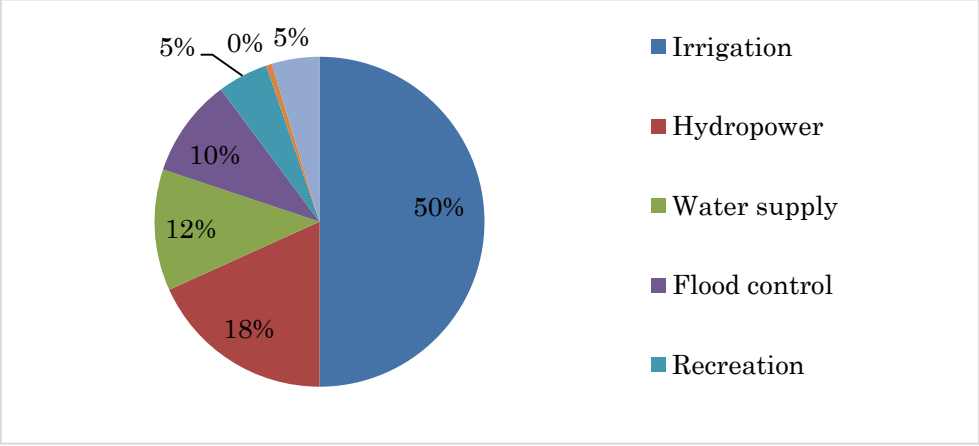


Figure 1.1. Functions of single-purpose large dams

Source: ICOLD, 2013

Demand for water from agriculture, hydropower for industry and drinking water and electricity for the world's growing population is fueling a large increase in dam construction, but with considerable regional variation. A total of 37,641 large dams are now listed on the registry of the International Commission on Large Dams (ICOLD), although experts estimate that the total of extant large dams exceeds 45,000 (Duflo & Pande, 2007). Hydroelectric generation is growing, with global consumption reaching 3,498

terawatt-hours and an installed capacity of 970 gigawatts in 2011 (Musolino, 2013), and this feeds demand for large hydropower dams.

Construction of large dams, defined by ICOLD (n.d.) as dams with a height of 15 meters or more from their foundation or a reservoir volume of greater than 3 million cubic meters, peaked in the 1970s in North America and Europe (WCD, 2000). Today more dams are decommissioned than are constructed in the United States and many other Western nations, but dam construction is growing rapidly in developing nations. In terms of installed base, the U.S., China, India, Japan and Canada claim the greatest number of large dams, as seen below. However, India and China have by far the greatest number of large dams currently planned or under construction (WCD, 2000).

Table 1.1. Installed base of large dams

Installed base of dams by country	
United States	9 265
China	5 191
India	5 101
Japan	3 076
Canada	1 166
South Africa	1 114
Spain	987
Turkey	741
Brazil	684
France	622

Source: ICOLD, 2013

The use of dams for hydropower generation has become increasingly important with the ongoing expansion of energy demand and the desire to mitigate climate change and reduce reliance on fossil fuels. Hydropower accounts for approximately one-fifth of the world's total electricity supply and is considered to be the greatest source of clean, renewable energy worldwide (World Bank, 2013). Dam projects are typically among the largest-scale infrastructure projects that a nation can undertake, with many dams costing several billion US dollars (Dams and Development, 2000). Lead times are long and national authorization is generally required, as hydropower dams are considered strategic assets for most nations. Cost overruns are common (World Bank, 1994), particularly for multi-purpose dams, and construction times average 44% longer than predicted, one study found (Ansar, et. al, 2014). Once a dam and hydroelectric facility are built, maintenance and power generation costs are low, averaging only 3-5 cents per kilowatt hour, much lower than for coal or natural gas (Worldwatch, 2013); however researchers have contended that due to unrealistically low cost predictions, most large dams adversely impact developing economies (Ansar, et. al, 2014). Hydroelectric generating facilities boast a high energy efficiency rate and offer more steady supplies than solar or wind power, as water can be stored during low demand periods and generation increased during peak periods. During periods of low rainfall, however, reservoirs may not contain enough water to generate electricity (Haluzan, 2012).

A hydroelectric generating facility has three major components: the dam that controls the flow of water, the reservoir where water is stored and the electric plant that produces power. In order to produce hydroelectricity water flows from the reservoir through the penstock, an intake channel, driven by gravity down to the turbine (see Figure 1.2). The water strikes and rotates the large blades of a turbine (typically a

Francis Turbine) that is attached by a shaft to an upper generator. As the turbines spin a series of giant magnets rotate past copper coils, producing alternating current (AC). The transformer inside the powerhouse converts the AC into higher-voltage currents, which are transmitted via power lines (National Geographic, 2013).

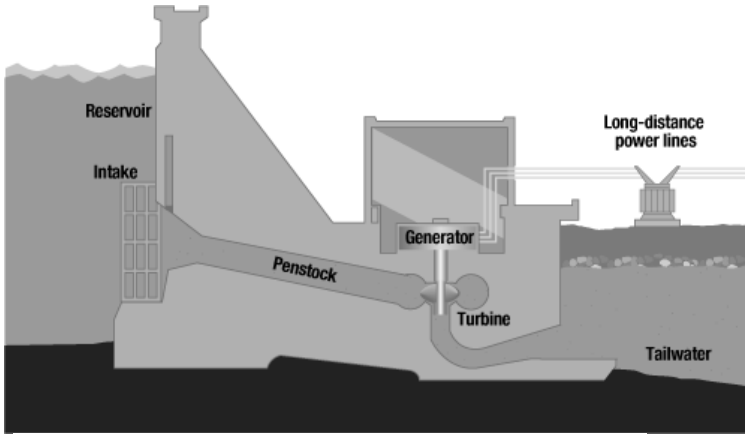


Figure 1.2. Schematic diagram of a hydropower dam
Source: Tennessee Valley Authority, nd.

Dam construction can have political, economic, environmental and social implications. Because dams often reduce the flow of water in water-stressed areas and damage fisheries and agriculture downstream, conflict may arise over dam construction on transboundary river systems, resulting in high-level bilateral negotiations, as with the U.S. and Mexico over use of Colorado River, or even threats of violence, as when the Egyptian government threatened to bomb a planned dam on the Nile in upstream Ethiopia (Wolfe, et al., 2003). However there have been few instances of outright bilateral conflict over dam construction, and most transboundary water basin management regimes like the Mekong Committee in Indochina have been able to reach general agreement on water allocation and river use (Wolfe, et al., 2003).

Domestic political strife, however, has frequently accompanied construction of large dams, mainly due to environmental or social concerns. In India, for instance, local resistance to construction of a cascade of dams in the Narmada river valley has given rise to marches, protests by more than 50,000 local residents, Supreme Court decisions that lowered the height of one of the dams to reduce the area of inundation, and the withdrawal of the World Bank as a major project investor. Although the protest movement was unable to prevent construction of the dams, by linking local and international human rights and environmental representatives and the media they were able to effect a change in World Bank investment policy and provide impetus for the eventual adoption of national safeguards for development-forced displacement in India (Gray, 1996) and strengthened legislation, the 2013 Land Acquisition, Rehabilitation and Resettlement (LARR) law. Protest against dams and displacement can take many forms, as catalogued by Oliver-Smith (2010, p. 46): “passive instruction, spontaneous protest, fliers, rallies, sit-ins, construction site occupations, teach-ins, courses, films, videos, folk dramas, stories, puppet shows, media campaigns, training programs, email list managers and web pages, road blocks, lawsuits, restraining orders, lobbying, political party action, conferences and seminars, declarations, hunger strikes, suicide squads, sabotage, guerrilla warfare, and many other strategies and tactics.” Worldwide, such activities have not succeeded in

reversing the upward trajectory of dam construction in developing nations, but they can result in longer lead times, lengthy court battles and increased costs for large dam projects.

Hydropower has been lauded as a "green and clean" renewable energy source that generates low CO_2 emissions, produces little waste and reduces local dependence on more polluting fossil fuels such as coal and petroleum. Hydropower dams can help limit the occurrence of downstream flooding or drought and can provide irrigation and drinking water (Dams and development, 2000), while the reservoir can provide scenic and recreational benefits. Many environmentalists, however, would regard dams' negative impacts as severe, abrogating hydropower's claim to be a clean energy source. Dams prevent sediments from flowing downriver, promoting riverbank erosion and hurting downstream soil productivity, while increasing unneeded sedimentation in the reservoirs and reducing storage capacity. Riverine plots may face increased salinity and waterlogging, reducing yields and altering cropping patterns (Duflo & Pande, 2007). Dams may disrupt spawning and fish migration and reduce fisheries by lowering downstream water levels, and they may damage other aquatic, plant and terrestrial life in the inundated area, reducing biodiversity (Fearnside, 2001). Reservoirs may become breeding grounds for disease vectors, particularly in tropical areas (Scudder, 2005). Rotting vegetation in reservoirs may also release large amounts of methane (contradicting claims that hydropower is a "green energy"), and in some cases, water pressure in inundated areas located above earthquake faults has been said to cause seismic activity.

Dams can bring welcome economic benefits to a developing nation, including export earnings from hydropower, as with Laos, which will receive up to $2 billion in total hydropower revenues from adjacent Thailand over the next 25 years from construction of the Nam Theun 2 dam alone (Delauney, 2010). Large hydropower dams are generally regarded by governments as "a flawed but still necessary development option," in the words of dam-forced displacement scholar Thayer Scudder (2005, p. 1). Decisions on construction of dams is often based on cost-benefit analysis, which quantifies projects in terms of overall economic costs and benefits but often doesn't consider non-economic costs, including environmental and health risks, or the differential distribution of costs and benefits. While there may be some local economic benefits near the dam site, such as construction jobs, increased local electrification and improved roads and other infrastructure, most of the revenues associated with dams as well as the hydropower itself accrue to investors, industry and urban areas.

1.2 Dam-forced displacement and resettlement (DFDR) theory

Hydropower dam construction not only changes the physical and economic environment of the dam site (see figure 1.3), but by inundating land to create the reservoir it may also displace local residents from their homes, land, and productive assets. The number of people displaced to date by dam construction is unknown, although the World Commission on Dams (2000) estimates that 40 to 80 million people were displaced by the year 2000. Sociologist Michael Cernea (2007) has estimated that 10-15 million people worldwide are displaced each year by development, including hydropower dam construction.

Figure 1.3. Dam under construction in Quang Nam province, central Vietnam

A number of researchers in development-forced displacement and resettlement (DFDR) have conceived theories to explain the processes and impacts that accompany human displacement due to construction of dams and other types of infrastructure. These conceptual models can serve many functions, including prediction of future outcomes, explanation and diagnosis of mechanisms of change, guides to resolve emerging problems and to promote theory-led field research (Cernea, 2000). The best-known and most commonly cited theoretical model is Cernea's Impoverishment Risks and Reconstruction Model, which he presented and refined in several papers published in the 1990s and early 2000s in order to both explain what occurs and to "create a theoretical and safeguarding tool capable of guiding policy, planning, and actual development programs to counteract these adverse effects" (2000, p. 14). The model posits eight categories of risks for affected populations due to displacement:

1. Landlessness: Expropriation of land for infrastructure construction, often by invoking a nation's right of eminent domain, can deprive residents of productive systems and capital, which is often not fully replaced by land compensation. Particularly in the case of dams, which are typically built in rural, upland areas where residents are highly dependent on agriculture or fisheries, the loss of land can be the most serious cause of impoverishment.
2. Joblessness: Those earning wage employment may lose jobs, businesses, and customers, and rural laborers without their own land may lose access to work on land owned by others. Job skills may not easily be transferred to the resettlement site.
3. Homelessness: Although most dam resettlement projects include provision of housing or compensation to allow affected residents to construct housing, housing standards may worsen. In addition, resettled residents may suffer from alienation and disruption from the loss of their cultural space.
4. Marginalization: The loss of productive assets and established businesses may cause residents to fall to a lower rung on the economic ladder, with rural smallholders becoming landless laborers or shopkeepers forced to work for others as store employees. Marginalization for farmers can also occur from moving from areas with fertile bottom-land soil to less fertile upland plots or loss of access to supplementary income sources, such as fisheries or forests.

5. Food insecurity: Declines in soil fertility, lost access to fisheries, high livestock mortality, and shifts from subsistence farming to cash crops can cause increased vulnerability to risk and food insecurity. For farmers, particularly, preparing and cultivating new agricultural plots is a multi-year process that requires food assistance during initial post-resettlement.
6. Increased morbidity and mortality: Displaced people suffer higher rates of disease and mortality due to poor water supplies or waste systems during and after resettlement, exposure to disease vectors in the reservoir and high levels of psychological and social stress.
7. Loss of access to common property and services: Many rural residents depend on common property assets such as communal forests, pastures, and rivers for income and food security and they frequent culturally significant sites such as burial grounds and community houses. Loss of access to common property resources is rarely compensated as part of a development project.
8. Social disarticulation: Physical fragmentation of a community by dispersing residents to different relocation sites disrupts social networks and social capital and can cause feelings of powerlessness and dependency. Even when communities are kept together the new surroundings and attendant spatial, temporal and cultural disruption can profoundly affect people's ability to restore social functioning.

Cernea's model has been applied broadly by researchers investigating displacement or migration induced by climate change, disasters and conflict as well as development. Other authors have suggested appending new categories of risk to the model, such as violation of human rights (Downing, 1996) and loss of a community's resilience (Scudder, 2005).

Another influential theoretical model for understanding displacement implications is the four-stage framework, a predictive behavioral model created by Scudder and Colson in the early 1980s. Basing his conceptual approach on the project stage framework proposed by Robert Chambers and other development specialists, Scudder (2005) posits that affected populations will respond similarly during specific phases of displacement and resettlement, regardless of geographical or cultural differences. It differs from Cernea's model in that its focus is on successful resettlement and long-term adaptation:

1. Planning and recruitment stage: In this phase residents learn that they are to be resettled and become involved in the planning process, which can help to mitigate the stress that arises when considering impending change.
2. Adjustment and coping stage: This stage includes physical removal and adjustment to a new living environment; it may last from three years to over a decade, depending on the number of resettlers involved and the degree of support and resources available to them. In the immediate aftermath of resettlement living standards typically decline, as productive activities such as farming or commerce are disrupted and funds are expended for housing, moving and other needs. Resettlers tend to be risk-averse in behavior, favoring incremental changes and trying to recreate previous patterns of spatial arrangements, social networks and ritual behavior as a way of reorienting their lives.

3. Community formation and economic development: During this stage of adaptation, resettlers' transition from risk-averse to a more risk-taking stance, with many investing in new ventures, cultivating novel crops or livestock, migrating for employment and learning new livelihood skills. However this behavior is predicated on the presence of development opportunities, appropriate infrastructure and access to markets. The diverse livelihood strategies adopted during this period also result in growing wealth differentials and social stratification. Community religious rituals and social activities flourish.
4. Handing over and incorporation: This stage applies to the second generation of resettlers, as it involves integrating resettled communities into the local political economy and institutions that had been administering project-related activities hand over authority to local residents, NGOs, other local governmental bodies and the private sector. Many projects never reach this stage, as there may be long-term adverse economic impacts from factors such as environmental degradation or fragmentation of land holdings among the children of resettlers.

Some researchers contend that Cernea's model focuses heavily on economic and livelihood risks of displacement and insufficiently considers the cultural and psychological risks and impacts of being involuntarily removed from one's home (McDowell, 1996; De Wet, 2006a). Although economists have argued that sufficient financial compensation can address many of the IRR framework risks, many anthropologists and other social scientists researching displacement have emphasized its profound impact on the psycho-social well-being of individuals, households and communities. Downing and Garcia-Downing (2009) have proposed a three-stage process of change in which the appearance of a "routine culture" before displacement, in which residents mutually negotiate construction of space and time through social interaction and attempt to answer primary questions such as "Who are we and where are we going?," is replaced by the appearance of a "dissonant culture" before and during displacement and initial resettlement (p. 229). Dissonant culture involves the destabilization of routine culture, so that the previous order and predictability are lost, as productive activities are disrupted and social bonds and relations are broken. Particularly for the elderly, the shock of resettlement may incur disorientation and physical stress. To adjust, resettlers may engage in more frequent ritual activity, they may struggle to reestablish temporary order and they may experience loss of access to natural resources and impoverishment. Finally the community establishes a new routine culture, in which new social networks are built up and novel orderings of space and time become the norm. This process is eased by protecting vulnerable people, providing more opportunities for the displaced to participate in resettlement decisions and instituting policies that do not merely address a community's material needs.

Investigation of the outcomes for 60 million development-displaced people in India found that 75% ended up poorer than they had been before displacement (Fernandes, 2008). Thayer Scudder analyzed the outcomes of 50 hydropower dam resettlement projects and found that in 36 cases, or 82% of the total, the majority of resettlers experienced some degree of impoverishment when comparing pre- and

post-displacement living standards (2005). In 7% of the cases living standards improved, while previous standards were largely restored for another 11%. He concluded that resettlement planning needs to account for the complexity of the process. In particular, he said, successful outcomes combine the following elements: high capacity for project authority staff, adequate funding, political will, provision of livelihood support and opportunities for resettlers to participate in decision-making.

In analyzing the reasons for adverse outcomes for World Bank-financed dam projects, a 1994 World Bank report cited "timely availability of adequate funds" for resettlement (p.6) as the single greatest constraint. Costs for resettling displaced populations are often externalized in project budgeting; even when the budgets factor in resettlement expenditures, cost overruns are common, it concludes. Scudder (2005) notes that on average environmental and social costs of a dam project, including resettlement and livelihood restoration, account for some 10% of total project costs. A lack of expertise in resettlement or local government capacity was also a contributing factor for many unsuccessful outcomes, the World Bank report noted (1994).

1.3 Rights-based and risk-based approaches

The preponderance of poor outcomes for development-forced resettlement raises two central questions: What are the rights of the displaced, and what countermeasures can be enacted to improve outcomes? In this section I will discuss rights-based and risk-based approaches to displacement and resettlement as they have evolved over recent decades. The principal ethical consideration concerns the concept of development, or economic growth. According to the UN Declaration on the Right to Development (1986), development is a comprehensive process "aimed at the constant improvement of the well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and in the fair distribution of benefits resulting therefrom." This definition would seem to exclude displaced populations, who are often denied free, meaningful participation in resettlement decision-making, and to whom development project benefits, from highways and urban redevelopment to hydroelectricity, rarely accrue. It was suggested by Padel (2013) that due to the adverse implications of many infrastructure projects for local residents "investment-forced displacement" would be a more appropriate phrase to use rather than "development-forced displacement."

Some economists have additionally disparaged dam-forced displacement as contravening a fundamental development principle, the Pareto improvement criterion. According to this principle, named after the early 20th century economist Vilfredo Pareto, "a "Pareto improvement" takes place when, compared to the *status quo ex ante*, at least one individual is made better off, *and no individual is made worse off*, as a result of the project (Kanbur, 2008, p. 130)." While some argue that strict application of this principle would doom most development initiatives from the start, this ethically informed approach supports implementation of a policy that aggregates gains and losses, giving greater weight to the gains and losses of the poor than those of the wealthy.

Several other significant international treaties and declarations speak to the human rights of displaced populations. The Guiding Principles on Internal Displacement (United Nations, 2004) states that "every human being shall have the right to be protected against being arbitrarily displaced from his or her home or place of habitual residence" and includes among the causes of displacement "cases of large-scale development projects that are not justified by compelling and overriding public interests." This has been interpreted as meaning that displaced residents, like refugees from conflict or natural disasters, are endowed with the same guarantees of human rights and humanitarian law as refugees who cross international borders (Robinson, 2003). However, internal migrants and the displaced are governed by national laws and institutions; although governments may sign international declarations, the primacy of national sovereignty curtails these instruments' legal force. In addition, approaches based on human rights are difficult to instrumentalize as project guidelines; they are more readily applicable for redress after a right has been violated. According to Robinson (2003) other generally recognized human rights that may be abrogated by involuntary displacement include the right to development and self-determination, participation, life and livelihood, the right of remedy and the rights of vulnerable groups like indigenous ethnic minorities and women (DFDR has been shown to disproportionately impact indigenous ethnic minorities in developing nations).

While rights-based approaches seek to avoid violations of human rights as defined by international law and conventions, most laws and policies that apply to displacement and resettlement focus more narrowly on addressing risks to livelihoods and living conditions, as detailed in the IRR model. The earliest, and arguably still the most influential of these measures is the Guidelines for Involuntary Displacement adopted by the World Bank in 1980, as formulated by their then advisor, sociologist Michael Cernea. At that time the Bank was one of the major investors in large dam projects worldwide, and was frequently the target of harsh criticism for not safeguarding the assets or livelihoods of affected people. The guidelines, which have since been revised several times, seek to avoid or minimize involuntary resettlement and to reformulate resettlement as development projects that include benefit-sharing and meaningful consultation and participation by affected persons (World Bank, 2013). Most critically, resettlers should be assisted in order to "improve the livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher." The Asian Development Bank and other regional financial institutions followed suit with their own guidelines based on the World Bank model in 1995, as did bilateral aid agencies in the OECD-member countries and the OECD itself (Cernea, 2000). Dozens of banks and other financial institutions, including many dam project investors, are signatories to the Equator Principles, a similar set of guidelines for the private sector. The World Bank safeguards have also been influential as templates for national resettlement legislation and policies. However, the Bank's acceptance of pre-displacement living standards as a resettlement objective, which is also true of safeguard policies of ADB and other influential

institutions, has been criticized by many experts as inadequate, since many displaced populations are initially impoverished (see De Wet, 2006b).

The most influential advisory body dealing with displacement by hydropower dam construction body was the World Commission on Dams, a World Bank and IUCN-supported group of dam, social policy and environmental experts that was convened in 1998 in order to analyze the impacts of large dams and conceive recommendations for sustainable dam project development. The group published a landmark book, Dams and Development: A New Framework for Decision-making, before disbanding in 2000. In the book they set out seven strategic priorities for equitable, sustainable hydropower development, including ensuring that local people receive information on dam projects and that indigenous residents be allowed "free, prior and informed consent" (p. 215), that residents' livelihoods and ecosystem services provided by rivers be supported, and that adversely affected people become beneficiaries of dam projects.

1.4 The Vietnamese context for dam-forced displacement

Impetus for new dam construction – and the resulting displacement– have shifted in recent years to the developing world. To understand more about development-forced displacement impacts and responses, it is instructive to focus on a nation like Vietnam, where high population density exacerbates displacement impacts and the regulatory framework and new approaches are evolving to respond to the complex issues that are raised by construction of cascades of large dams. Vietnam's recent history and economic growth as well as governmental administration and ethnic minority concerns will be briefly examined in the following sections to provide context for the case study in Quang Nam province, central Vietnam that follows.

Vietnam is the largest nation in the peninsular Indochina region of Southeast Asia, sharing borders with China to the north and Cambodia and Laos to the west. The country is characterized by tropical lowlands, hilly intermediate areas and densely forested upland areas. In the north are steep mountains and the Red River Delta, in the central region abutting the border with Laos and Cambodia can be found the Annamite mountain range (known as the Truong Son in Vietnamese), and in the south are coastal lowlands and the Mekong River Delta.

The country is divided into 58 provinces, organized into 8 administrative regions: Red River Delta, Northeast, Northwest, North Central Coast, Central Highlands, South Central Coast, Southeast and Mekong Delta, along with four independent municipalities (Ho Chi Minh, Hanoi, Haiphong and Danang). The majority of the population is situated in the flat, coastal regions of the country, as are the main urban areas of Ho Chi Minh City, Hanoi, Haiphong, Danang and Hue.

Vietnam's history is characterized by a series of indigenous kingdoms and frequent regional bloodshed, overlaid by nearly a millennium of direct rule or indirect influence by a neighboring behemoth, China.

From the mid-10th century the Vietnamese was ruled by a series of autonomous dynasties, but it was only in 1802, when Emperor Gia Long founded the Confucian Nguyen Dynasty, that the country experienced unified rule. However in 1858 the French, reportedly angered by the refusal of the Vietnamese regime to grant trade concessions, occupied Vietnam by force with an armada of 14 ships and 2,500 men (Davidson, 1991).

French occupation brought advances in infrastructure, health and education, but heavy taxes on farmers and predatory extraction of the country's resources spawned growing Vietnamese resistance to occupation rule, which erupted shortly after World War II into full-scale warfare between the French and the Viet Minh forces, led by Ho Chi Minh. After French forces were badly defeated in a battle in the inland town of Dien Bien Phu the French were forced to surrender and at the Geneva Conference in 1954 both parties agreed to divide the nation into a Communist-dominated North and a non-Communist South Vietnam at the Seventeenth Parallel.

The United States and other Western nations became concerned that Communist influence would grow, leading to South Vietnam and other Southeast Asian nations falling under Communist rule as well. In the late 1950s the US began training the South Vietnamese army, supplying military advisors, and supplying aid to the country. American involvement quickly escalated, and by late 1965 200,000 American troops were in South Vietnam, fighting the Soviet-supported North Vietnamese army and local guerrilla forces (Dodd, et al., 2009). The bitter war that followed was said to have cost the lives of up to four million civilians and 1.25 million troops on both sides. It finally came to an end in 1975 with the capture of Saigon by the North Vietnamese and unification.

After the "American War" the new Socialist Republic of Vietnam attempted to institute collectivization of agriculture and other command economic measures, but after experiencing hyperinflation and famine in the early and mid-1980s the government finally agreed to institute broad market-based economic reforms from 1988, which they called "doi moi," or renovation. With doi moi came privatization of land tenure, as citizens were provided with land use certificates for cultivated and occupied land, private enterprises were encouraged and foreign investment was welcomed. However, political and religious freedoms were still forbidden by law. As in neighboring China, Vietnam continues to practice one-party Communist rule while allowing capitalist economic activity.

1.5. Structure and processes of governance in Vietnam

Vietnam is administered by a central government consisting of ministries and departments (the executive branch), a National Assembly of 498 popularly elected members (the legislative branch), and the Supreme Court (the judicial branch) in accordance with the revised Constitution that was promulgated in 1992 (Kerkvliet & Marr, 2004). The legislators select the president, who is the head of state, and he appoints a prime minister to head the government. No political party is allowed beside the Communist Party.

Although the Assembly members are guided by Communist Party directives and more than 90% are party members, they have become more vocal in recent years in opposing government proposals, including development projects that would cause large-scale environmental or social impacts.

Government administration below the national level has three tiers: province; district; and communes (for rural areas), townships or wards. The country had 61 provinces, 598 districts and 10,500 communes, townships or wards in 2002 (Mattner, 2004). The structure, prima facie, resembles that of many other nations. However, actual implementation of authority presents a much more complex picture, as governance at every level is directly or indirectly controlled by the Communist Party. At each provincial, district and commune/township/ward level there exists an elected People's Council, which decides on matters of local concern such as education, social welfare and health care, and approves or rejects proposals and policy. There is also a People's Committee, which is selected by the People's Council members and actually implements day-to-day administration as the local executive branch. The Committee includes key cadres, or officials, including a chair and vice chair, the local Communist Party secretary, other members overseeing finance and resource use, the head of the local security police, and elected leaders of local mass organization branches, supported by other clerks and staff members. The structure additionally includes the provincial, district or commune branch of the Communist Party, a People's Court (at the provincial and district levels only), offices of the People's Army, representative offices of national ministries and departments, and branches of the mass organizations belonging to the Fatherland Front. The lowest level of rural authority is the village or hamlet, which has an elected village head and vice-head, but no national regulation legally specifies the role of these representatives, so their authority is exercised at the prerogative of the commune People's Committee officials (Kerkvliet, 2004).

According to the Constitution the Communist Party is "the force leading the State and society," and this authority is applied by having party officials play central roles at all levels of government (Kerkvliet, 2004, p. 8). The chairs of the People's Committee and People's Council are typically high-ranking officials in the Communist Party branch, for instance, and other members are also party members. Although Council members are elected they must first be approved by a Party-dominated election council before listing on the ballot, which favors those with party membership. And although according to law the People's Council supposedly "represents the will, aspirations, and mastery" of local residents, the council is also accountable to the next level of administration and cannot make decisions that are contrary to the resolutions or decisions of the superseding level or contravene national law (Kerkvliet, 2004, p. 6). Leadership of a People's Committee of a commune, for example, must be approved by the chair of the higher-level district People's Committee, but it is selected by the People's Council, which meets for just a few days per year and basically endorses whatever proposals it is asked to decide on. The district People's Council is authorized to nullify any decision or directive made by those at the commune level. Due to this strong web of mutual obligations, it is unlikely that officials at the lowest levels of commune and district will propose

policies or programs not in line with national or provincial objectives, no matter how strongly they are supported by local residents, thus effectively stymieing adoption of innovative or original approaches.

Researchers have noted that despite the prevailing image of a top-down, dominant authoritarian national government dictating provincial and district-level decisions, in recent years there has been more flexibility and responsiveness to residents' opinions, especially as channeled through officially recognized mass organizations such as the Farmers' Unions and Women's Unions (Kerkvliet & Marr, 2004). Decree 29/1998/ND-CP, also known as the law for grassroots democratization, requires that village-level initiatives be agreed upon by local residents and creates formal mechanisms for residents to voice and adjudicate grievances. Although the law has not yet been applied uniformly, and has received a tepid welcome from many rural government officials, it appears to have contributed to some improvements in responsiveness of local officials to residents' concerns. The mass media and other civil society organs and groups have recently been allowed greater room for voicing discontent with government policies, authoritarian rule and corruption. These trends will be further explored in Chapter 6.

1.6 Rising electricity demand fuels hydropower expansion

Energy demand has grown rapidly in Vietnam to fuel GDP growth averaging 6.3 percent per annum from 2000 to 2013 (Trading economics, 2013). The World Bank (2013) estimated energy demand to be growing from 10-12 percent per year from 2010 to 2015, down slightly from 2005-2010 but generally outpacing supply, thus contributing to frequent brownouts during summer months throughout the country. Electricity production has increased from only 8.7 million MWh in 1990 to 26.7 million MWh in 2000 and an estimated 77.2 million MWh in 2008 (APEC, 2007). Vietnam is one of the largest producers of petroleum and natural gas in Southeast Asia and currently plans to construct one or more nuclear plants, but it still relies on hydropower for 37% of its electricity (Tran, 2011). Although hydroelectric supplies are projected to increase as the installed base expands, with new sources of energy coming on-line hydropower's percentage of electric generation supplies is expected to decrease to 19% by 2030 (see Figure 1.4).

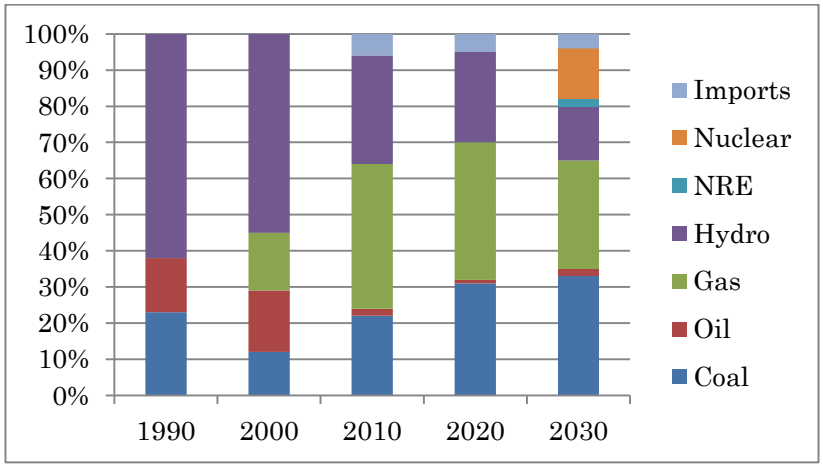


Figure 1.4. Vietnam's energy mix for electricity generation

Source: APERC, 2012

As shown in Table 1.2, as of 2010 the country had an installed base of seventy hydropower dams of at least 30 MW on the nation's 10 major river basins, generating electricity totaling 17,540 MW (Dao, 2010). Dozens more dams are either planned or under construction (Marsima, 2013).

Table 1.2. Hydropower dams on main river basins

	River basin	No. of hydropower dams with 30+MW facilities	Installed capacity (MW)	Annual electricity production (kWh)
1	*Da*	7	6800	27.2
2	*Lo-Gam-Chay*	9	1500	6
3	*Ma-Chu*	7	760	2.7
4	*Ca*	3	470	1.8
5	*Vu Gia-Thu Bon*	8	1250	4.5
6	*Tra Khuc-Huong*	2	480	2.1
7	*Se San*	8	2000	9.1
8	*Ba*	6	650	2.7
9	*Serepok*	5	730	3.3
10	*Dong Nai*	15	2900	11.5
	Total - large dams	70	17,540	70.9
	Total - small dams (<30MW)		7000	30
	Total hydropower		24,000-25,000	11-110

Source: Dao, 2010

Energy demand in Vietnam has outpaced supplies in recent years, causing occasional brownouts or rolling blackouts during the dry summer months. Electricity demand is estimated to increase by 15-17 percent per year, with investments in the country's power industry expected to reach US$ 20 billion by 2020 (Dao, 2010). The urgent need for increased supplies has spurred rapid expansion of dam construction and fast-tracking of construction plans by allowing dam projects to proceed without the strict competitive bidding requirements of other types of infrastructure projects in accordance with the 2003 government decree 797/CP-CN (Nguyen 2008). Hydropower dam construction in Vietnam is overseen by EVN, Electricity of Vietnam, a national utility monopoly under the Ministry of Industry.

Dam construction in Vietnam has uprooted more than 200,000 people (Bui & Schreinemachers, 2011), with two major hydropower dams alone, Hoa Binh and Son La, displacing an estimated 58,000 and 92,000 residents, respectively and as Dao (2010) reports, the affected villagers continued to suffer from high morbidity and food shortages for decades thereafter. The majority of the displaced were ethnic minority

agriculturalists highly dependent on access to forests and fisheries as well as upland fields for their livelihoods. According to Dao (2010), resettlement for the Hoa Binh dam over a 17-year period, from 1979 to 1996, was conducted before legislation had been adopted requiring environmental impact assessments or spelling out land tenure and compensation terms, and local governments and the hydropower authority lacked experience in planning resettlement and rehabilitation. Most of those resettled were given little or no compensation or livelihood support, and today more than 60% continue to live under the poverty line. Many of the residents still lack access over electricity, and conflict over land use and access to natural resources has arisen between resettled and host communities.

In 1997 the Vietnamese government conceived its first resettlement policy, supported by the World Bank, which had become an important investor in Vietnamese infrastructure projects. Decree 22/1998/ND-CP identifies terms for compensation and responsibilities for investors in resettlement. In February 2000 the World Commission on Dams (WCD) held regional consultations on East and Southeast Asia in Vietnam and two years later a Vietnamese translation of the group's final report was disseminated widely throughout the country (Dao, 2010). Later NGOs like the Vietnam Rivers Network and the Vietnam Union of Science and Technology Associations (VUSTA) held workshops for governmental officials, media and the public to promote WCD recommendations (Dao, 2010).

In 2002 Vietnam enacted the Comprehensive Poverty Reduction and Growth Strategy (CPGS), which coordinates the activities of bilateral and multilateral aid donors that are currently active in Vietnam in a "pro-poor" approach that also enables Vietnam to qualify for World Bank and IMF credits (Friederichsen, 2009). Contiguous with these steps, the Vietnamese government has embarked on legal and political reform initiatives in the wake of the economic doi moi reforms initiated in 1986. Doi moi, which literally means "change and newness," was intended to foster gradual change to enable Vietnam to become a "market economy under Socialist direction" (Beresford, 2008). The reforms included a series of laws affecting dam development, including the 1993 Law on Environmental Protection, requiring environmental impact assessments for dam and other large-scale infrastructure projects that included assessment of local socioeconomic impacts. Successive land laws ceded land use rights and allowed residents to transfer or lease land use rights for financial gain. This also established the basis for compensation of resettled farmers for land they had previously cultivated.

A disproportionate number of those displaced by dam construction in Vietnam are members of indigenous ethnic minorities, in part because the majority of ethnic minority communities lie in rural, upland river basin areas, where dams are typically situated, and their further post-resettlement economic and social marginalization has drawn increasing public scrutiny. These activities and trends increased public pressure for an improved legal framework to protect the displaced against impoverishment risks, as shown in Table 1.3.

Table 1.3. Critical legislation affecting resettlement policy

Year	Law/Decree	Significance
1993	Law on Environmental Protection	Requires environmental/social impact assessments for dam construction
1993	Land Law (land tenure reform)	Land users can transfer or lease land use rights, are entitled to compensation for loss of land
1998	Decree 22/1998/ND-CP	Legal land users receive compensation for land and assets, hydropower authority must construct housing
1998	Grassroots Democratization Decree	Local residents decide on commune-level development investments
2003	Revised Land Law	Local government, not hydropower authority, responsible for resettlement
2004	Decree 197/2004/ND-CP	Stresses government responsibility for livelihood support
2007	Decree 84/2007/ND-CP	Further spells out obligations for land compensation
2009	Decree 69/2009/ND-CP	Discusses settlement of land disputes
2010	Decree 34/2010/QD-TTg	If replacement land is of lower value than original holdings, households may receive compensation for difference

Source: Informed by Dao, 2011

Large-scale hydropower dam projects are regarded as highly strategic development initiatives that require national approval. In particular, if a planned dam is projected to displace more than 20,000 people, approval must be obtained by the National Assembly (Nguyen 2008). However, actual implementation of resettlement of residents necessitated by dam construction is under the authority of the province, which delegates most day-to-day implementation to district authorities. The dam investors establish a project authority team to represent their interests and oversee dam and hydropower facility construction. Representatives of the hydropower authority and representatives from provincial government establish a compensation council to decide payments to residents, and they set up a commission that administers the reservoir, which also includes representatives from district- and commune-level governments as well as a few community representatives. Any complaints or claims by displaced residents are dealt with by district authorities; independent adjudication mechanisms are lacking.

Although hydropower development has been officially rationalized as being in the greater national interest, concern about deleterious social and environmental impacts has been voiced by government figures as well as media, NGOs and other civil society organizations. Construction of Southeast Asia's largest dam, Son La, in northern Vietnam, was reportedly delayed for years in the early 2000s by members of the National Assembly before finally winning approval in 2002 (Nguyen 2008). In response to widening public expressions of concern in recent years, in May 2013 the government cancelled previously approved plans to construct 338 hydropower dams, citing environmental risks, and scrapped an additional 67 hydropower projects as of August 2013 (Nguyen 2013). All major hydropower dams currently under construction are expected to be completed in 2015 (Nguyen 2008), leaving only mid-size and small dams for development and implying greatly reduced dam-forced displacement in the future, but concern about conditions for existing displaced communities is bound to continue.

1.7. Vietnamese population composition and the Co-tu ethnic minority

As of 2012, the estimated population of Vietnam was 91,519,289, with an annual growth rate of 1.054% and a fertility rate of 1.91, compared to 1.21 for Japan. The country has a high population density of 280 people per square kilometer, although lower than Japan's figure of 350 (2012). The average life expectancy is 72.41. Vietnam has a very young population, with a median age of 27.8, as compared to 44.8 for Japan. The percentage of the population aged 65 or over is only 5.6%, while that of Japan and some other OECD nations exceeds 20% (Government of Vietnam, 2009a).

There are 54 officially recognized ethnic groups in Vietnam, with the majority Kinh accounting for 86% of the population. The largest ethnic minorities include the Khmer Khrom (approximately 1.3 million) and the ethnic Chinese (823,000). The Kinh predominate in the lowland, coastal areas, while most of the ethnic minorities live in the upland regions, where they have resided as subsistence farmers and hunters for centuries. The most numerous ethnic minorities are listed in Table 1.4.

Table 1.4. Vietnam's ethnic groups

	Group	Total population		Group	Total population
1	Kinh	73,594,427	16	Cham	161,729
2	Tay	1,626,392	17	San Diu	146,821
3	Thai	1,550,423	18	Hre	127,420
4	Muong	1,268,963	19	Raglay	23,278
5	Khmer	1,260,640	20	Mnong	102,741
6	Mong	1,068,189	21	Xtieng	85,436
7	Nung	968,800	22	Tho	74,458
8	Hoa (Chinese)	823,071	23	Brieu-Van Kieu	74,506
9	Dao	751,067	24	Kho Mu	79,929
10	Gia Rai	411,275	**25**	**CO-TU**	**61,588**
11	E De	331,194	26	Giay	58,617
12	Ba Na	227,716	27	Gie-Trieng	50,962
13	Xo Dang	169,501	28	Ta Oi	43,886
14	San Chay	169,410	29	Ma	41,405
15	Co Ho	166,112	30	Co	33,817

Source: General Statistics Office, 2010

Recent census data reveal a widening income gap between Vietnam's ethnic minorities and the Kinh majority. In 2010, for example, although ethnic minorities accounted for only 14.5 percent of the total

population, 47 percent of those under the official government poverty line were minority residents (World Bank, 2013)[1]. Although poverty rates have declined dramatically in recent years, the decrease is much slower among ethnic minorities than among the Kinh majority (see Figure 1.5). Ethnic minorities continue to lag behind for most indicators of development, including household income, education, gender parity and average lifespans, despite being the target of a series of nationwide poverty alleviation initiatives in recent decades. The disparity between majority Kinh and ethnic minorities is especially striking in the upland south central coast region, the area of focus in this thesis, where more than 90 percent of ethnic minorities were under the poverty line in 2004 against only 15 percent of Kinh and ethnic Chinese residents (Swinkels & Turk, 2006). Baulch, et al. (2002) found that the minority groups whose living standards have grown fastest are those with more education and Vietnamese fluency who have attempted to assimilate with the Kinh majority.

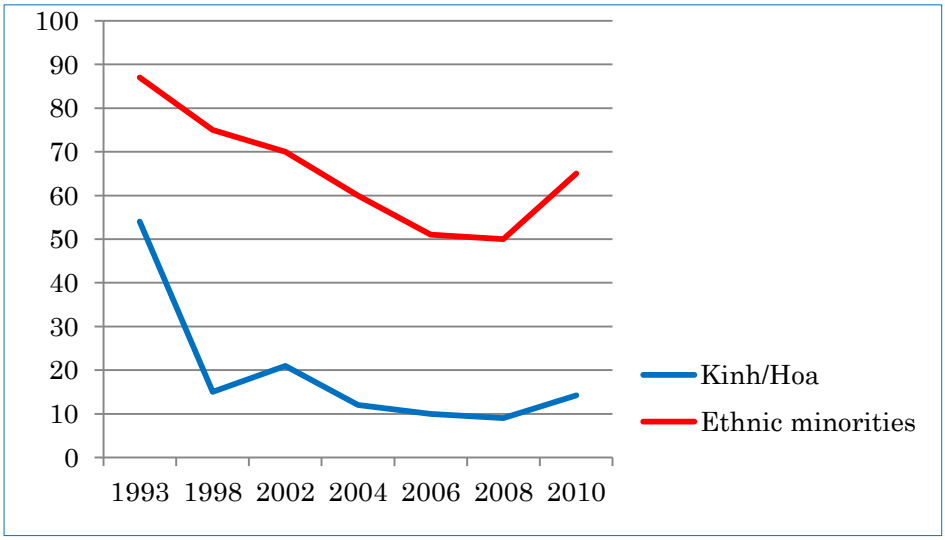


Figure 1.5. Poverty rate trends by ethnicity, 1993-2010

Source: Swinkels & Turk, 2006

The most geographically, linguistically and culturally remote communities tend to be in the northern and central upland regions, and that is where poverty rates are highest (Baulch, et al., 2002), as they are poorly endowed in human, financial and physical capital. According to an analysis by Jamieson, Cuc and Rambo (1998), population growth among upland minorities has increased environmental degradation and brought down per capita incomes, which has caused greater dependence on government subsidies, NGOs and foreign assistance. This in turn denies agency to minority residents, as it is difficult to surmount

[1] The poverty rate referred to in these pages is the official rate of the Ministry of Labor, Invalids and Social Affairs (MOLISA), updated in 2010 to 400,000 VND for rural areas and 500,000VND for urban areas. The uptick for 2010 shown in Figure 1.6 for both Kinh and minority residents reflects this recalibration, which increased the percentage regarded as poor.

institutional obstacles to participation in decision-making or receiving adequate representation in central government-initiated development.

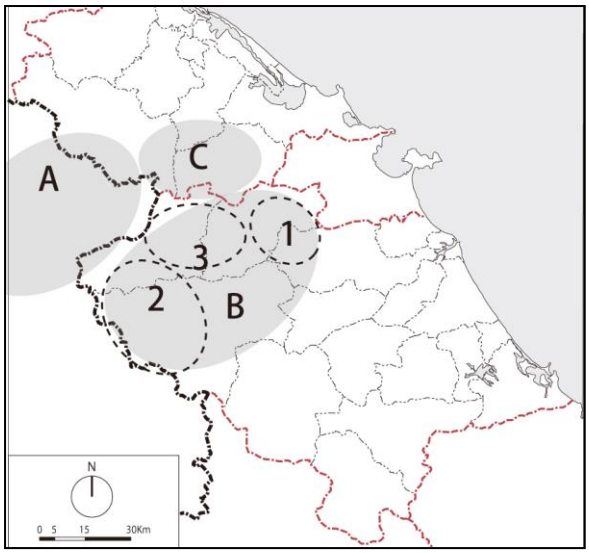
There have been a number of national poverty alleviation measures, including Program 135 and the Hunger Elimination and Poverty Eradication Program, that have targeted poor communes and ethnic minority populations. Program 135, which was initiated in the 1990s, has provided more than US$1 billion per year in grants for the 2,000 poorest ethnic minority communes in 45 provinces for local infrastructure and development and has been credited with greatly improving basic services and well-being. Another long-standing program primarily targeting poor minority residents is the Fixed Cultivation Sedentarization Program, which was first established in 1968 to improve educational and livelihood opportunities by promoting a switch from shifting cultivation and residential mobility to a sedentary lifestyle. This was also intended to improve national security by enhancing control of local residents and to mitigate deforestation for agricultural conversion. However, since many minority agriculturalists lacked appropriate fertilizers or sedentary cultivation skills their inability to shift production to fallow fields lowered productivity and contributed to food insecurity.

1.8 Co-tu history and culture

The ethnic group studied here is the Co-tu (also written as Co Tu in Vietnamese and Katu or Catu in English), included in the Katuic branch of the Mon-Khmer linguistic group and mainly living in central Vietnam and in the upper Sekong river basin in southern Laos (section A on the map in Figure 1.6.). They number 61,588 according to the 2009 national census, with the majority living in the vicinity of the Annamite Cordillera mountain range (*Truong Son* in Vietnamese) in Quang Nam (section B) or Thua Thien Hue provinces (section C) in central Vietnam. In Vietnam they can mainly be found living in the catchment area of the Vu Gia-Thu Bon river system and in upstream regions of the Huong-Ta Trach River in Thua Thien Hue provinces, particularly in Nam Dong district. Although historically there has been a great deal of commerce, intermarriage and contact between groups across the Annamite mountains, due to environmental divergence Arhem has further divided the Vietnamese Co-tu populations in Quang Nam province into three subgroups, as indicated in the map in Figure 1.6:

1. Residents of the Con river basin in Dong Giang district, Quang Nam.
2. Residents of the upper reaches of the Bung river in Na Giang district. These residents are the focus of the research conducted on resettled villagers impacted by construction of the Song Bung 4 hydropower dam (see Chapter 6).
3. Those living in the middle and upper sections of the A Vuong river basin in Tay Giang and Dong Giang districts. This upland area ranges in altitude from 800-1100 meters above sea level and is located about 70-100 kilometers from Danang city to the east. Although today a national road connects the city with upland areas within three hours, due to seasonal flooding of local roads and frequent landslides during the rainy season many villages are essentially inaccessible for part of the year. This inaccessibility has helped to preserve the traditional cultural characteristics of many

Co-tu villages in Quang Nam province as opposed to villages in Nam Dong district, Thua Thien Hue province, which are within closer reach of the central Vietnam city of Hue.



A: Southern Laos
B: Quang Nam province
C: Thua Thien Hue province

1: Con river basin
2: Bung river basin
3: A Vuong river basin

Figure 1.6. Geographical segmentation of Co-tu communities
Source: Yoshiko Matsuda

Although no written documents exist that authenticate the geographical origins of the Co-tu, it is believed that they have lived in Vietnam for at least 300 years (Luu, 2007). The word "Co-tu" was translated as "savage" by early 20th century French anthropologist Le Pichon, due to their reputation for ritualized killing and frequent inter-village warfare; however many Co-tu believe that their name means "people living in the headwaters," due to their prevalence in upland regions of central Vietnam (Arhem, 2010). They themselves distinguish between those living in highland and lowland areas of the Annamite cordillera and they are further divided by clans, or lineages. Each of the more than 30 clans each has its own clan name that is very distinctive from majority Kinh Vietnamese names, with clan names such as Alang, Ating, Bhnuoch and Zo-ram commonly found in Tay Giang and Dong Giang districts. The greater proximity of the majority Kinh residents has had a great impact on the customs and lifestyles of Co-tu in Thua Thien Hue province. For example, many Co-tu residents in Hue have adopted Kinh-style names, with some Co-tu villages dominated by residents with the (Kinh-style) family name of Ho after the Vietnamese revolutionary figure Ho Chi Minh, a widely revered figure among the Co-tu, and Kinh-style given names as well.

The Co-tu are patrilineal and patriarchal, with women primarily responsible for farming (mainly swidden cultivation) and men for hunting, fishing, and carrying out ritual activity such as the buffalo sacrifice ceremonies that mark harvests and other seasonal events. The Co-tu cultural identity is closely tied to traditional subsistence production of upland rice and hunting as well as handicrafts such as cloth weaving on a simple loom and basketry (see Figure 1.7).

Figure 1.7. (From left) Woman in Co-tu traditional woven dress; weaving on a hand loom; traditional basketry

Arhem (2010) writes that the rural Co-tu village is both an administrative unit identical to those of all recognized Vietnamese villages and a cultural unit embodying unique Co-tu traditions, identity and myths. The former is the smallest unit in the Vietnamese local government structure of (in ascending order) village, commune, district and province, and is led by an elected headman and vice-headman and an appointed Communist Party secretary. Subsidiary to these leaders are the elected local heads of mass organizations such as the Farmers' Union, Women's Union, Youth Union and Fatherland Front. The official village leadership in the villages examined here also includes an elected elder, a resident with wide experience whose knowledge and judgment is well-regarded by the other villagers.

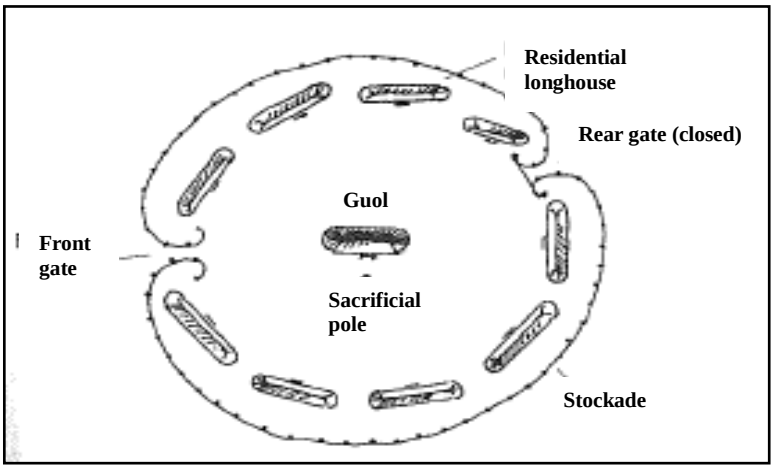


Figure 1.8. Traditional concentric Co-tu village layout
Source: Arhem, 2010

The village as a cultural unit denotes the traditional Co-tu administrative framework, headed by an informally selected group of elders, the most respected members of the village, who may lack official authority but are consulted by the elected headman and vice-headman for all important decisions. Until the outbreak of warfare with the French in the 1950s and subsequent Vietnam-American war, which fomented frequent movement and forced dissolution of upland villages in central Vietnam, Co-tu villages in the A Vuong river watershed were semi-permanent in composition, although characterized by frequent resettlement due to declines in game or resources, the ill-omened occurrence of illness or deaths of villagers, or conflict with neighboring villages (Ta, 2002). Villagers at the study site reported moving roughly every 20-30 years in prewar days, but they typically moved within a particular territory, a section of the A Vuong river basin. Originally village populations were small, with most prewar villages averaging 40-60 members and composed of a small number of lineages, or clans.

Traditional villages were constructed in concentric layouts with an external wall to enhance protection, as depicted in Figure 1.8, and strangers were regarded with suspicion. Inter-village conflict was common, either to propitiate spirits by causing enemy bloodshed, as a display of courage by young men, or as revenge for earlier attacks (Ta 2002). In forays called "blood raids," which may have been practiced in some areas until the mid-20th century (Ta, 2002), the young men of a village would kidnap a victim from a neighboring village and kill him with spears to empower the village and ensure good harvests. This ritualized killing gained the Co-tu the reputation of being fierce and skillful warriors, but they were also known for intricate weaving, drums, masks and paintings. Arhem described the Co-tu as "a proudly independent people of hunters and shifting cultivators living in a rich but hostile forest environment, and possessing a vigorous spiritual culture dominated by the belief in countless spirits and by a consuming concern with death" (2010, p. 15).

During the Vietnam-American War the Co-tu strongly aligned with the North Vietnamese government, although villages were located both to the north and south of the 17th parallel that demarcated the border of North and South Vietnam (American University, 1965). Many Co-tu soldiers were sent for military training in the North and became familiar with Vietnamese language and the majority Kinh culture, and their training in warfare and hunting enabled many soldiers to become decorated war heroes. Many villages were in close proximity to the Ho Chi Minh trail, the main conduit of military goods, arms and personnel from North Vietnam to Communist troops in the South, and the site of fierce fighting, frequent bombing by American forces and the frequent use of napalm and other defoliants. The Co-tu reportedly suffered thousands of casualties and most villages were relocated several times during the war, with cultivation and livelihoods severely disrupted. Luu (2007) described one hamlet in Tay Giang district, Quang Nam province, which moved location 13 times between 1954 and 1993, mainly because of warfare or outbreaks of disease. However, after the war ceased in 1975 most Co-tu residents returned to their original locations and rebuilt their villages, showing remarkable community resilience (Arhem, 2010).

Postwar sedentarization policies by the Vietnamese government forced many villages to move far from their original sites to more accessible lowland areas closer to roads and settlements for easier provision of infrastructure and social services and more consolidated government control (Arhem, 2010). Instead of traditional circular layouts with a community house at the center many villages were now laid out in linear fashion along a road or on a grid. Many Co-tu villages were moved from highland areas in Quang Nam province to lower altitude land in Thua Thien Hue province or to neighboring districts, and were provided with paddy fields and directed to cease shifting cultivation, hunting and other traditional practices. Introduction of the Forest Land Allocation Program in 1991 allowed many ethnic minority residents to gain usage rights to allocated forest land. The government's objective was to restore forest cover and promote productive forest plantations, but it also disrupted traditional communal Co-tu forest management regimes and weakened forest practices and beliefs (Bayrak, et al, 2013). Former swidden land was now intensively cultivated for acacia and other cash crop plantations, often damaging long-term soil

sustainability (Arhem, 2020). In addition, as Arhem noted: "…upland rice cultivation and hunting with accompanying beliefs and ritual practices are the Katu way of meaningful subsistence – their 'culture'" (2010, p. 24). The changes in livelihood practices and cultural traditions that were initiated at that time accelerated throughout ensuing decades with implementation of development and postwar modernization policies.

Attachment to one's village is an important attribute of traditional Co-tu culture. As Arhem wrote, 'the idea of the village as a 'safe place' is strong and enduring' among the Co-tu (2010, p. 150). The Co-tu believe that each village is linked to a supernatural 'guardian spirit', whose protection must be sought through holding rituals and animal sacrifices (Luu 2007, p. 56). These rituals are conducted in or beside the community house, or *guol*, a thatch-roofed stilted wooden building which functions as the "soul" and "symbol" of the village (Luu 2007, p. 34). Today meetings of village organizations or visiting officials take place at the community house, as do New Year's celebrations and other village-wide events, and it is where unmarried men gather. As shown in Figure 1.9, the *guol* houses the ceremonial village drum and skulls of hunted wildlife, which are said to be vessels for the village spirits.

Figure 1.9. Top: Guol exterior and interior; Bottom: skulls of hunted wildlife, traditional dance

The traditional village layout, with a stockade surrounding the village and a front and rear gate, reflects the need to defend the village territory. The guol always occupied the center of the village facing the main gate and adjacent to a sacrificial pole, a highly decorated pole to which sacrificial buffalo and other animals are tied on ritual occasions.

1.9 Characteristics of the Research Site

Figure 1.10. A Vuong dam

A case study approach affords an opportunity to gain a greater understanding of the complex factors that affect the results of displacement and post-resettlement adaptation for indigenous ethnic minorities. The primary research site for this thesis was the area of the A Vuong hydropower dam, Dong Giang district, in Quang Nam Province, which is located in the Truong Son mountain range. The Truong Son is a mountain chain of high peaks, steep hillsides and deep valleys, still mainly covered by montane forests that extend north to south along the border between Vietnam and Laos. Altitudes range from 200-2000 meters above sea level. The natural forest is dominated by evergreen broadleaf and coniferous trees, with beeches, laurels, magnolia and tea bushes and trees found in higher reaches (Arhem, 2010). Tall trees rising to 35 meters can be found at higher elevations, and ferns, orchids and herbs cover many tree trunks and branches. The range is the watershed for several rivers that flow from its eastern flanks eastward to the South China Sea and westward into the Mekong Basin in Laos and Cambodia. The dam (Figure 1.11) is on the A Vuong river, a tributary of the Vu Gia-Thu Bon river basin, which is 10,350 square kilometers in length and is the main source of drinking water, irrigation and other water supplies for the central coastal city of Danang. The upland areas of the river basin were traditionally home to many ethnic minorities, including Co-tu, Xo Dang and Gie-Trieng. Although other mountainous provinces, such as Dak Lak and Kon Tum, have experienced high rates of in-migration from lowland Kinh farmers, with the encouragement of Vietnamese government economic promotion schemes, upland Quang Nam province remains fairly homogenous and minority-dominated, as seen in Table 1.5.

Table 1.5. Ethnic composition of upland districts in Quang Nam province

District	Total villages	Percentage of ethnic minorities	Poverty rate
Dong Giang	93	74	52
Tay Giang	70	95	85
Nam Giang	64	79	63
Bac Tra My	73	46	56
Nam Tra My	43	97	78
Phuoc Son	65	65	60
Total	408	71	64
Province total		7	30

Source: Strategic Environmental Assessment of the Hydropower Master Plan in the Context of the Power Development Plan VI Final Report, 2009.

The villages composing the main research site are as follows:

1. Aden village, Ma Cooih commune, Dong Giang district
2. Tro Gung village, Ma Cooih commune, Dong Giang district
3. Cala village, Dang commune, Tay Giang district
4. Alua village, Dang commune, Tay Giang district

The study villages were selected because their displacement more than five years prior allowed the researchers to understand longer-term implications of resettlement, due to their ethnic minority composition, and due to long-standing relations between local government officials and Vietnamese collaborators at the University of Danang, which eased the process of applying for official permission to visit the sites. Although the paucity of detailed data concerning livelihood and well-being before the move was a limitation, it could be argued that visiting the sites several years after resettlement allows researchers to accurately assess prospects for long-term sustainability after the dam construction project term has ended and related compensation and support have ceased. Two other villages in Ma Cooih commune, Pachepulan (March 3, 2011) and A Xo (December 4, 2012), were visited for additional information about resettlement and forest protection activities, respectively.

Other Co-tu resettlement villages were visited for the sake of comparison or additional information:

1. Song Kung hydropower dam, Song Kung commune, Dong Giang district, Quang Nam province (Son, Butua villages), September 11, 2011
2. Song Bung 4 hydropower dam, Nam Giang district, Quang Nam Province (Thong Hai, Pa Pang villages): March 15, 2012 and September 6-7, 2012
3. Binh Diem hydropower dam, Binh Thanh commune, Hung Ta district, Thua Thien Hue province, (Bo Hon village): February 26, 2013 and September 20, 2013

The main research site comprises four hamlets that were resettled due to construction of the A Vuong dam and hydropower generating facility in Ma Cooih commune, Dong Giang district, Quang Nam Province. The dam is located on the A Vuong river, a tributary of the Vu Gia Thu Bon river basin. As seen in Figure 1.11, the A Vuong dam is one of seven large dams planned, under construction or in operation on the river basin; the dam project was the first in Quang Nam to necessitate the relocation of local residents. It is located approximately 10 kilometers upstream from the confluence with the Bung river and 80 kilometers west of Da Nang. The roller compacted concrete (RCC) dam is 83 meters high with a gated spillway at the center, a 5.3 km headrace tunnel and a 520m long surface penstock. The powerhouse has two Francis turbine units of 105MW, for a total of 210MW of electricity. The reservoir has an area of 9 square kilometers and can store 267 million cubic meters of water, corresponding to 21% of the mean annual inflow of 40 cubic meters (ADB REDMP Cross-cutting, 2010). Construction of the dam began in 2003 and the dam was completed in 2006; the hydroelectric power plant was inaugurated in July 2010 and is expected to eventually supply 815 million kilowatts per year of electricity (VOV Online, 2010). The reservoir has a capacity of 343.5 million cubic meters.

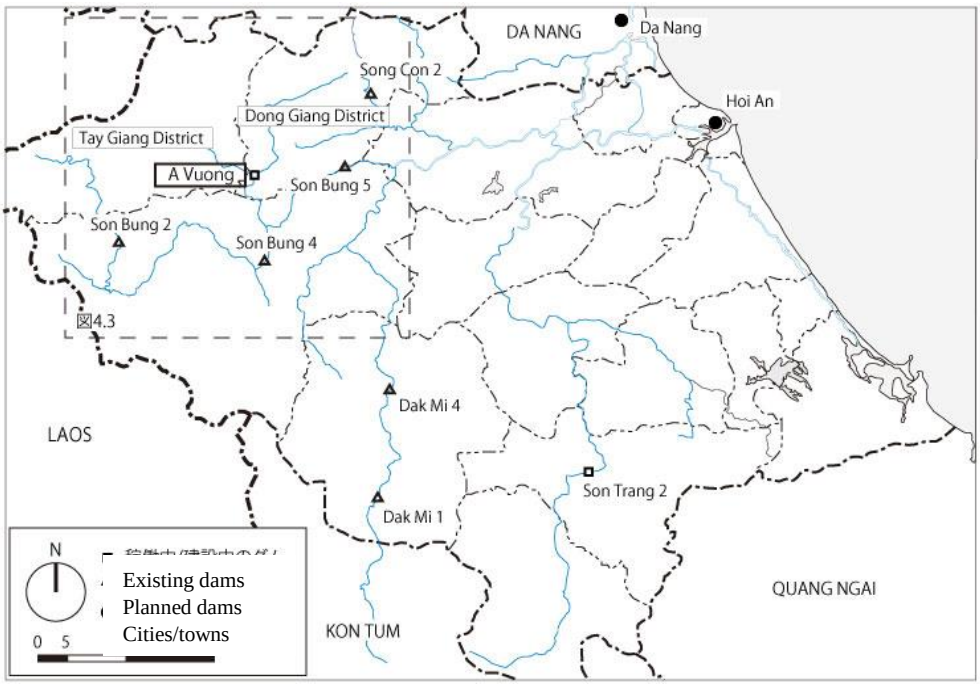


Figure 1.11. Large dams on the Vu Gia Thu Bon river basin
Source: Yoshiko Matsuda

The following infrastructure was constructed by the A Vuong hydropower project: the dam, a structure to divert water from the reservoir to the power station, a power station 13km downstream of the dam, a transmission line to connect the power station with the national grid, roads to connect the project site and resettlement villages to the national road system, and auxiliary areas for operation of the dam and hydropower facility. The sole investor in the project was Electricity of Vietnam (EVN), and the estimated project cost was US$253.8 million (ADB, 2007). Some 2,000-3,000 workers, mainly from outside the affected communes, were employed at the dam site during the construction period.

Figure 1.12. A Vuong dam release in September 2009 (Source: Viet Bao, 2009)

The A Vuong dam was implicated in one disaster attributed to human error in September 2009, when the sudden release of 150m^3 of water from the reservoir when the area was affected by torrential rains due to typhoon Ketsana caused severe flooding in downstream areas (Figure 1.12). According to one Vietnamese newspaper, the flooding killed at least 24 people (TalkVietnam, 2012).

The dam project displaced a total of 330 households in 7 villages, as shown in Table 1.6. An additional 50 households in one village, A Xo in Ma Cooih commune, lost agricultural land. The displaced residents were resettled in 2006.

Table 1.6. Affected villages and population displaced by A Vuong dam

Name	No. of villages	Total affected HHs	Resettled HHs	Resettled pop.	Destination for HHs			HHs moved away
					Pache-pulan	Cutch-run	Cala-Alua	
Dong Giang dist., Ma Cooih comm.	5	307	257	1142	132	95		30
A Xo village		69	19	25				19
A Zal village		64	64	302	63			1
Aden village		49	49	227	6	41		2
Ta Reng village		70	70	333	47	19		4
Tro Gung vill.		55	55	255	16	35		4
Tay Giang dist., Dang commune	2	73	73	430			69	4
Alua village		52	52	277			48	4
Cala village		21	21	153			21	0
Total	7	380	330	1572	132	95	69	34

Source: ADB, 2007: Matsuda, 2013

Compensation for resettled residents was decided on the basis of national legislation covering land acquisition from 1998 (Decree No. 22/1998/NDCP), which has little detail concerning terms or content of compensation provisions for dam-resettled populations. Subsequent legislation was much more detailed. In this case, terms and the framework for compensation were agreed upon after discussion between EVN, the main investor, and officials from the people's committees of Quang Nam province, Dong Giang and Tay Giang districts, and Ma Cooih and Dang communes, and they were prepared by the Water Resource and Rural Development Center (ADB, 2007). According to the district government compensation included the following (ADB, 2007):

1. Loss of agricultural land: Households were provided with replacement land near resettlement villages. If the original land holdings had a higher value than the replacement land they were given cash compensation for the difference. Agricultural plots averaged 1 – 1.2 hectares in size.
2. Housing: A local contractor constructed a single-family 40-50-square-meter concrete block house for each household. The house was valued at 75 million VND. If the original house was of higher value the household received the difference in cash. Each house sat on a residential plot measuring 400m^2 for residents of Cutchrun and Pachepulan and 200-250m^2 for residents of Cala-Alua (due to a narrow riverbank location).
3. Other housing and architectural assets: Cash equivalent to 100% of the assessed value was provided if these structures could not be dismantled and reconstructed at the new site.
4. Annual crops, perennial trees, fish ponds, tree plantations: Cash compensation was given according to unit prices decided by the Quang Nam provincial committee.

5. Moving allowance: One million Vietnamese dong (VND) was provided for dismantling and moving houses.
6. Allowance for livelihood recovery: During the year after moving, households received monthly payments of 110,000 VND per person per month for 12 months.
7. Agricultural support: One payment of 500,000 VND was made per household for purchasing seeds and seedlings.
8. Vulnerable households: Households consisting of the elderly, disabled, single mothers and other vulnerable residents received additional compensation.
9. Moving incentive: Households that moved to the resettlement village ahead of schedule were awarded three million VND.
10. Supplemental allowances: Each household was also provided with 400,000 VND to allay the costs of moving grave sites, one buffalo for sacrifice during a ritual for leaving the original village, 500,000 VND for a housewarming ceremony at the resettlement village and one breeding heifer valued at two million VND.

Vietnamese consultants and specialists of the Vietnam Geology Union, Geography and Biological Resources Institutes prepared an Environmental Impact Assessment Report for the A Vuong dam project in March 2004, although groundbreaking for construction occurred in August 2003 (VNCOLD, n.d). The EIA report offered a brief analysis of environmental and socioeconomic impacts in the reservoir area only; there was little assessment of impacts on upstream or downstream areas (ADB, 2007; Government of Vietnam, 2004).

A village elder in Aden village reported that the Aden residents formerly lived in a village named Po Roc that was located in To Poo commune, Nam Giang district, where the 35 households practiced upland shifting cultivation of rice, cassava and bananas. The village was moved to Dong Giang district in 1970 and supplied with fields for upland rice and 1 hectare each of paddy rice. They settled in an area that is now inundated by the A Vuong reservoir, with the population totaling 78 households before the move. The Ta Reng villagers had historically lived beside the A Vuong river near what is now the main gate to the A Vuong dam, and had practiced wet land cultivation along with upland rice cultivation since 1973. Information on the other villages was not obtained.

According to village leaders, the first meetings concerning future dam construction were held by district officials in the villages in 2003, and meetings became more frequent from 2005 until the move occurred in June 2006. After the hydropower investors received project approval from the national government the project proposal was relayed to the province and then to the district, which formed a compensation council that included officials from the province, district, communes and the hydropower authority to decide on terms of compensation for assets. Villagers were asked to declare their assets and informed of proposed compensation amounts in 2005, then given one week to contest the decision. Although some individuals

expressed resistance to the move or disagreed with the compensation amount after several meetings and some adjustment of payment terms each household head signed a paper indicating voluntary agreement to the move (private communication with head of Dong Giang district people's committee, 2011).

Elected village leaders and elders were asked to select from two proposed resettlement sites. The hydropower authority paid for the costs of the move and provided trucks to move furniture, building materials and other belongings.

The research site includes two villages, with each village containing two adjacent hamlets, in Tay Giang and Dong Giang districts in Quang Nam province (Figure 1.15). The total population is 1,071 residents, of whom more than 95% are from the Co-tu ethnic minority; non-Co-tu residents include schoolteachers and local officials as well as a few small-scale merchants. The villagers originally lived beside the A Vuong river, a tributary of the Vu Gia river in Ma Cooih commune, Dong Giang district, but they were resettled to three different locations. Two of these locations, in Ma Cooih commune and in Dang commune, will be examined in Chapter 3; thereafter the research will focus mainly on the Ma Cooih commune site, which is called Cutchrun. The Ma Cooih commune sites (Aden and Tro Gung hamlets) are approximately 12-16 kilometers from the dam site, far from the A Vuong River, while the Dang hamlets (Cala and Alua) were located on the riverbank during the study period, less than 2 kilometers upriver from the reservoir.

Aden

Tro Gung

Figure 1.13. Aden and Tro Gung villages (Cutchrun)

Cala

Alua

Figure 1.14. Cala and Alua villages (Cala-Alua)

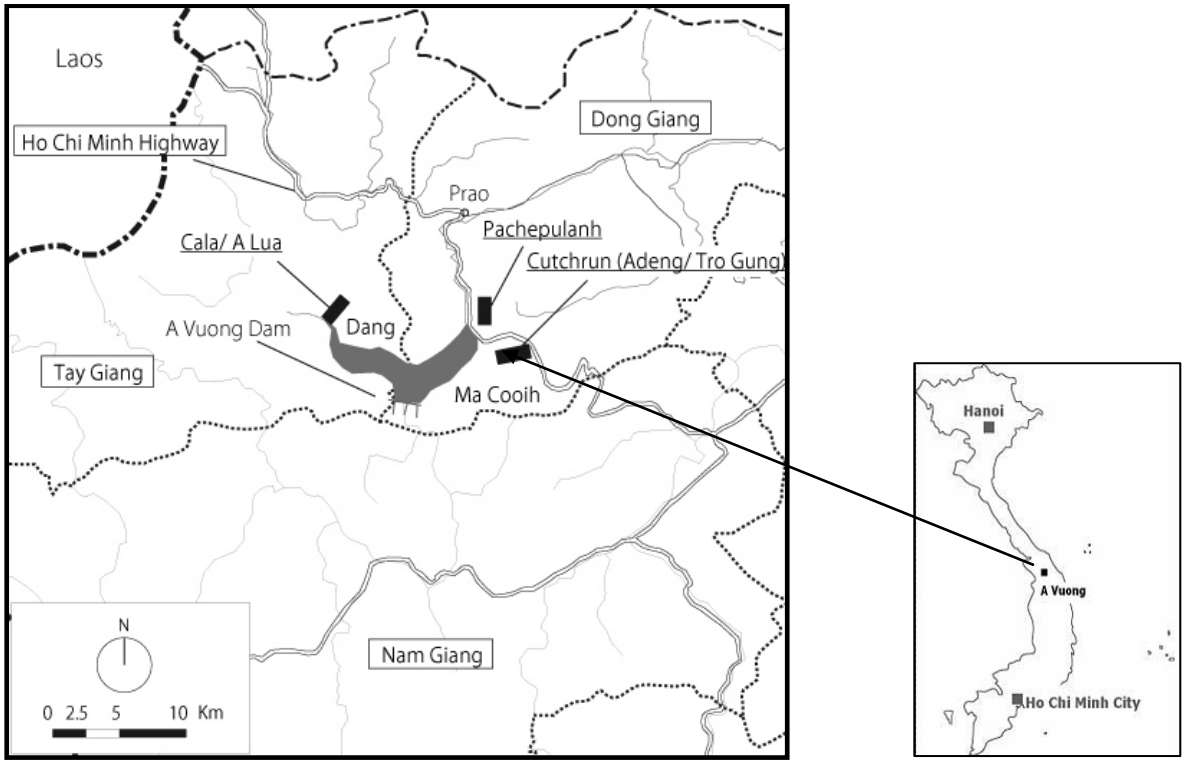


Figure 1.15. Map of research site

Source: Yoshiko Matsuda, 2012

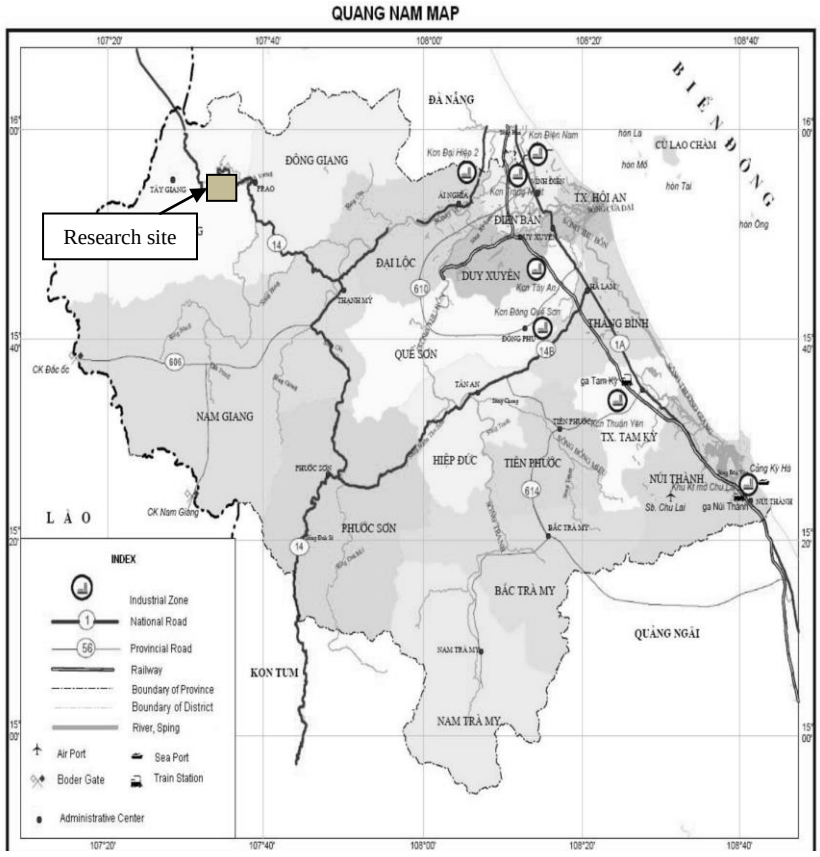


Figure 1.16 Quang Nam province

Source: http://investinvietnam.vn/report/parent-region/88/126/Quang-Nam.aspx

1.10 Village conditions and characteristics

As housing compensation, a private contractor constructed a house on piles with a front staircase and a small auxiliary structure with a narrow kitchen, toilet and bath for each family. The layout for residents of Aden and Tro Gung is depicted in Figure 1.17:

Figure 1.17. Provided house and auxiliary structure

Source: Y. Matsuda (2013)

The layout of Aden village is shown in Figure 1.18. It differs greatly from the concentric configuration of a traditional Co-tu village and the community house, or *guol*, is located near the entrance to the village instead of at the center, as would be customary. Residents originally living in the inundated village of Ta Reng, who were dispersed to Aden and another resettlement village, settled in the eastern quadrant of the village, generally in homes numbered 6-26. The other homes are occupied by residents from the original pre-resettlement village of Aden. Villagers live in closer physical proximity than they had previously, with land surrounding the village used for forestry, protected forest and some paddy field and cultivated plots.

As can be seen in the villagers' hand-drawn area maps (see Figures 1 and 2 in Appendix C), although some land has been provided for paddy rice cultivation, the amount is much less than the acreage cultivated along the A Vuong river before resettlement.

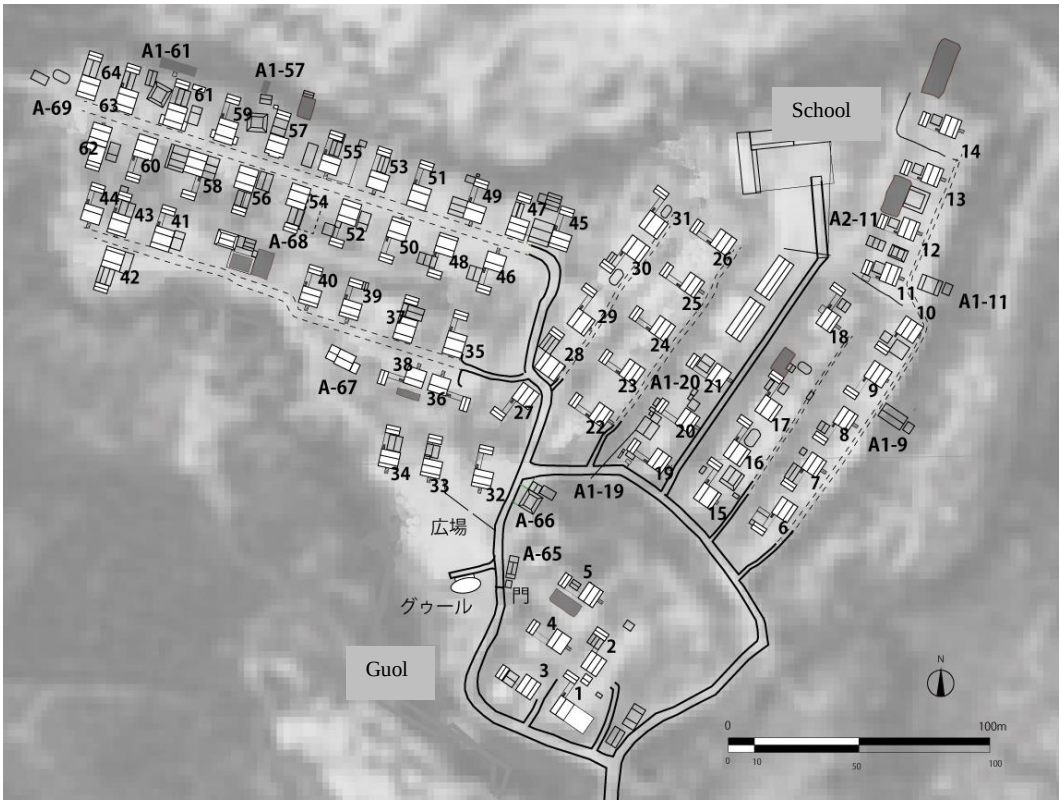


Figure 1.18. Aden village layout

Source: Y. Matsuda (2013)

1.11 References

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CHAPTER 2. METHODOLOGY AND APPROACH

This chapter explains the main thesis statement and supporting research questions undergirding this thesis and details the methods and approaches that were used to gather data. A list of interview subjects and information about field visits is also included. The household survey questions and SPSS-based descriptive analysis of the survey responses can be found in the Appendices.

2.1 Research scope and objectives

As mentioned above, thanks in part to the influence of safeguards and recommendations of external organizations such as the World Congress of Dams and domestic popular pressure, the legal and policy framework for dam-induced resettlement has been incrementally improved in Vietnam. Recent national decrees have specified more generous terms of compensation and support, and have included requirements for transparency of information and local participation in decision-making, and provision of livelihood support. Nevertheless, recent case studies suggest a continuing policy-praxis divide, as resettlers continue to suffer impoverishment (see Dao, 2010).

A Vietnamese government-sponsored study applied Cernea's IRR Model to identify the areas of greatest risk in Vietnam (SEA, 2009). It was found that although the loss of wage-paying jobs is not a major concern for the mainly rural subsistence farmers who have been displaced, the other risks are present in most projects, as shown in Table 2.1. Unproductive farmland and attendant food insecurity as well as loss of access to forests and rivers are particular concerns, given increasing population in upland areas that has reduced the available productive land per capita, as are the loss of river fisheries, rapid declines in biodiversity and high levels of deforestation and illegal logging.

Table 2.1. Application of the Impoverishment, Risk and Reconstruction model to Vietnam

Type of risk and likelihood for dam projects in Vietnam		
Landlessness	High	Most APs farm land in inundated area
Joblessness	Low/medium	Wage earnings not major income source
Homelessness	High	Over 200,000 have already lost homes
Marginalization	Medium/high	Social and cultural impacts particularly adverse for ethnic minorities
Morbidity	High	Disruption of access to medical facilities may increase risks
Food insecurity	High	Poor land provision and difficulty of establishing new plots will be felt most in early days
Loss of access to common property resources	Very high	Restricted access to forests and fisheries
Social disarticulation	Medium/high	Depends on resettled community and relations with host communities

Source: Strategic Environmental Assessment of the Hydropower Master Plan in the Context of the Power Development Plan VI Final Report, 2009.

Academic research on dam-forced displacement and resettlement in Vietnam is relatively recent, reflecting the recent surge in new dam construction and attendant displacement. One of the first studies was by Dao (2010), who reviewed related legislation enacted in the past few decades and described several dam projects with adverse outcomes, concluding that policy reform may have limited effectiveness in ensuring improved well-being for DPs. Beckman (2011) focused on forest protection measures and the impacts of dam construction, noting that although these initiatives promised improved ecosystem health and protection against seasonal flooding, they may also negatively impact residents' ability to adapt to changing weather patterns as before, since they disrupt previous patterns of resource use. Ha (2011) examined the degree of participation in post-resettlement of ethnic minority residents displaced by the Son La dam in northern Vietnam, determining that those with higher income or educational levels were better able to articulate their needs and gained more benefits than other DPs.

Most other recent research has examined economic factors or indicators related to livelihoods and well-being after resettlement. Land acquisition policies and practice was the focus of research by Pham, et al. (2011). They asserted that improved government policies were not reflected in equitable compensation or livelihood support, noting that collusion between local government and dam investors doesn't provide for interests of affected populations to be considered. Finally, Bui, et al. (2012) examined Son La Dam resettlement in a remote mountain site. They found that a lack of livelihood resources resulted in farmers adopting strategies for intensifying agricultural inputs to improve productivity. This resulted in increased income from before but greater income inequality in the community.

Although the research described above attempts to identify causal factors for post-resettlement impoverishment there is a clear need for a more comprehensive social science approach that investigates the influence of non-economic factors such as DPs' participation in decision-making and the contribution of indigenous skills and practices of ethnic minority residents within the context of a Communist state apparatus and an expanding civil society. This approach is posited on the assumption of agency by rural residents, shaped by the ideas of the participatory rural development movement spearheaded by Robert Chambers, in which rather than being passive subjects of economic change and development projects, residents are regarded as informed actors who adopt livelihood strategies and responses, based on a diverse menu of available resources and competencies as well as an operant context, in order to maximize outcomes. It examines economic outcomes as just one of many factors that determine whether residents can experience sustained improvement in their livelihoods and general well-being, arguing that a more holistic community capitals approach is needed to understand the implications of displacement on long-term community resilience. It also integrates a strong environmental perspective in order to understand the implications of various drivers of change – infrastructure construction, resettlement, environmental degradation and constrained access to natural resources and – on the local environment and the displaced residents. Given that a nearly universally identified challenge of dam resettlement is the

difficulty of securing arable land and the inevitable deterioration of DPs' natural capital, this approach has wide applicability both inside and outside Vietnam.

The thesis also offers a unique examination of the roles of multiple internal and external stakeholders in improving the prospects for rehabilitating livelihoods which has not been seen in other research in Vietnam or elsewhere. Given that today's large dam projects are being carried out in developing countries with evolving (or non-existent) regulatory and policy frameworks for resettlement and weak local governance, institutional inclusion of external stakeholders can secure benefit-sharing and proffer needed expertise and advocacy for the needs of resettled communities. The conclusions drawn here are thus not only germane for Vietnam but have relevance for future resettlement planning in many nations around the world.

2.2 Research questions and structure of the thesis

This study attempts to investigate the following research questions (RQs) for the A Vuong dam case study villages in Quang Nam province, with each of chapters 3-6 addressing one research question. Several case studies, including the main A Vuong dam case, will be examined to address research question 4:

- RQ1: What factors have impeded successful adaptation and improved livelihoods and living conditions for the case study villages? (Chapter 3)
- RQ2: How did residents act autonomously to improve community resilience after resettlement? (Chapter 4)
- RQ3: How could the benefits from hydropower projects be shared with the DPs? (Chapter 5)
- RQ4: What roles can internal and external stakeholders play to improve long-term sustainability for dam-displaced villagers in Vietnam? (Chapter 6)

The structure and flow of the thesis are outlined in Figure 2.1, with examination of main case study outcomes and challenges followed by expanded exploration of community capitals and strategies. The thesis then examines roles of multiple stakeholders to determine what roles they can play in resettlement, their strengths and limitations, their core interests and resources. Finally the author will make recommendations for improving resettlement planning in Vietnam and, when appropriate, in other nations contending with displacement impacts.

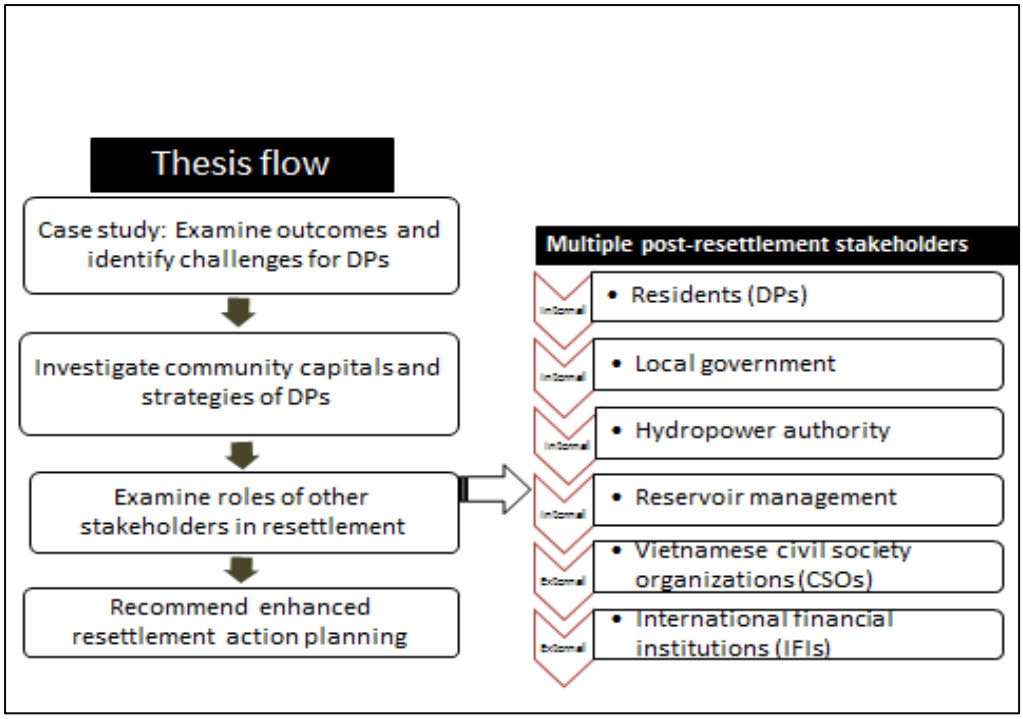

Figure 2.1. Structure and flow of the thesis

2.3 Methodology

The research on which this thesis is based was supported by a Japan Society for the Promotion of Science (JSPS) two-year challenging exploratory project grant (2011-2013): #23651036: *Evaluating Impacts and Community Resilience of Dam-displaced Indigenous Villages in Central Vietnam*. The project team included Prof. Hoang Hai of Danang University; Prof. Kei Mizuno and Prof. Chiho Ochiai of the Graduate School of Global Environmental Studies, Kyoto University; and Prof. Ty Pham Huu of Hue University of Agriculture and Forestry. Translation was provided by one Vietnamese translator and an ethnic Co-tu translator who visited the site for data collection. In addition, several GSGES graduate students accompanied the author on a September 2012 field visit to conduct research on housing and living conditions in Aden village. One GSGES student (Yoshiko Matsuda) based her 2013 master's thesis on this research.

From January 2011 to March 2013 the author, with assistance from faculty and graduate students from Kyoto University, University of Danang and Hue University of Agriculture and Forestry, conducted 58 semi-structured interviews and six focus group interviews with villagers at both sites (see Figure 2.2), using a Co-tu interpreter who could speak both Vietnamese and Co-tu and a Kinh (ethnic majority) Vietnamese. The use of Co-tu language facilitated interviews since many residents have poor command of Vietnamese and they could express themselves more spontaneously with members of the same ethnic minority. Household interviews were conducted in the home, while focus group interviews were mainly held in the village community house, with groups divided by gender to encourage female residents to participate actively. A survey on income, livelihoods and living conditions was administered to all 120

households in Ma Cooih commune in spring 2012 in order to gain additional data. Semi-structured interviews were also conducted with village, commune and district officials and key informants as well as with NGO officials and two anthropologists who have studied the Co-tu ethnic group extensively.

Figure 2.2. Focus group interview (left) and semi-structured household interview (right)

Interviews were also conducted with village, commune and district officials, and with other key informants, as listed in Table 2.2.

Table 2.2. Interviews with key informants (2011-2014)

Affiliation	Date	Place	Topics
Ma Cooih Commune People's Party Secretary	2011/6/27	Quang Nam	Resettlement process, village conditions
Headman, Alua village	2011/6/28	Quang Nam	Re-resettlement
Headman, Tro Gung village	2012/3/14; 2012/9/10 2014/2/28	Quang Nam	Village conditions
Head, Women's Union, Tro Gung	2012/3/4; 2012/9/10	Quang Nam	Role of Women's Union
Headman, Thong Hai village, Nam Giang dist.	2012/9/7	Quang Nam	Song Bung 4 project
Doctor, health clinic, Cala	2011/6/28	Quang Nam	Village health conditions
Vice-headman, Pachepulan village	2011/3/3	Quang Nam	A Vuong resettlement
Headman, A Xo village, Ma Cooih, Dong Giang	2012/4/12	Quang Nam	PES
Elected elder, Aden village	2012/9/10	Quang Nam	Village conditions
Head, Farmers' Union, Tro Gung	2012/3/14	Quang Nam	Role of Farmers' Union
Headman, Aden village	2011/3/2; 2013/3/3	Quang Nam	PES, village conditions
Head, Women's Union, Aden	2012/9/10	Quang Nam	Role of Women's Union
Headman, Cala village	2012/1/12; 2014/3/1	Quang Nam	Resettlement and disaster risk
Vice-headman, Aden village	2011/6/26; 201/3/3; 2012/3/12; 2013/9/8 2014/2/28	Quang Nam	Village conditions
Tay Giang District People's Party Secretary	2011/9/9	Quang Nam	Village conditions

Elected elder, Tro Gung	2012/9/10	Quang Nam	Village conditions
Director, (NGO) Rural Dev. Services Centre	2012/3/6	Hanoi	Ethnic minority villages
Manager, Song Bung 4 Resettlement Management Implementation Unit	2012/3/15	Quang Nam	Song Bung 4 project
Director, (NGO) Centre for Rural Dev. in Central VN	2013/9/20	Hue	Development activities, role of NGOs
Director, (NGO) Center for Social Research and Dev.	2013/2/26; 2013/9/21	Hue	Song Bung, role of NGOs
Vice-Dir., VN Institute of Culture & Arts Studies Sub-Inst.	2013/9/18	Hue	Cala-Alua village resettlement
Deputy Dir., VN Museum of Ethnology	2012/3/7	Hanoi	Co-tu culture
Head teacher, Aden primary school	2012/9/10	Quang Nam	Education of village children
Consultant, ADB	2012/9/7	Quang Nam	Song Bung 4 project
Exec Dir., (NGO) Green Innovation and Dev. Centre	2013/9/23	Hanoi	NGOs and policymaking
Sec.-Gen., VN Union of Friendship Orgs. of Thua Thien Hue Prov.	2013/9/21	Hue	Gov. relations with NGOs, INGOs
Dong Giang District People's Party Secretary	2011/6/27: 2011/9/8; 2012/4/12; 2012/12/11	Quang Nam	Dam project, EIA, PES
VN Country Rep., Foundation for Intl. Dev./Relief (FIDR)	2022/6/29; 2012/1/20	Danang, Tokyo	Co-tu village life, role of INGO
Headman, Tro Gung village	2011/6/27; 2012/1/13; 2012/9/10	Quang Nam	Village conditions
Former vice-minister, Ministry of Natural Resources	2013/2/26 2013/9/23	Hanoi	Land acquisition, benefit-sharing
Deputy Dir., Dept. for Ethnic Minorities, Comm. for Ethnic Minorities	2012/3/7	Hanoi	Govt. minority policy
Manager, Dong Giang Forest Protection Unit	2012/4/12	Quang Nam	PES
Dang Commune People's Party Secretary	2011/6/28; 2012/1/12	Quang Nam	Resettlement process, village conditions

Research methods include the following:

1. Literature review: Research on resettlement policy and outcomes, resettlement in Vietnam, regulatory framework, democratization and reform efforts in Vietnam; discourses of community resilience and participation; published research on development-forced displacement and resettlement.
2. A Vuong dam: Observation, surveys, focus group interviews and semi-structured interviews of residents of four hamlets; land use and housing surveys of 120 households in Aden and Tro Gung hamlets; interviews with district, commune and village officials; email interview with ADB consultants involved in prior research in area; use of SPSS research software for household survey data analysis.

3. Song Bung 4 dam: Semi-structured interviews with village residents; interviews with NGO, INGO, district, commune and village officials, as included in Table 2.2.

For the sake of comparison and understanding of Co-tu traditional housing conditions and village spatial configurations, other resettlement or traditional Co-tu villages were also visited, as seen in Table 2.3.

Table 2.3. Visits to other resettlement or Co-tu villages

Village	Location	Date	Purpose/description
Bo Hon	Binh Thanh comm., Hung Ta distr., Thien Thua Hue prov.	2013/2/26; 2013/9/20	Peri-urban Co-tu resettlement village
Thong 2	Ta Po comm., Nam Giang distr., Quang Nam prov.	2013/9/6	Song Bung 4 Co-tu resettlement village
Pa Pang	Ta Po comm., Nam Giang distr., Quang Nam prov.	2013/9/6	Song Bung 4 Co-tu host village
Azing 1	Prao town, Dong Giang dist., Quang Nam prov.	2012/9/11	Traditional Co-tu village
Dhrong	Talu comm., Dong Giang dist., Quang Nam prov.	2012/9/11	Traditional Co-tu village
Pachepulan	Ma Cooih comm., Dong Giang dist., Quang Nam prov.	2011/3/3	A Vuong Co-tu resettlement village
Butua	Song Kon comm., Dong Giang dist., Quang Nam prov.	2011/9/9	Song Kon dam Co-tu resettl. village
A Xo	Ma Cooih comm., Dong Giang dist., Quang Nam prov.	2012/12/4	Original A Vuong Co-tu village

The research was also informed by on-line documentation for the following Asian Development Bank projects, which were implemented at the project sites:

1. Benefit Sharing Mechanisms for People Adversely Affected by Power Generation Projects in Vietnam (ADB) – A Vuong Dam
2. Livelihood Improvement of Vulnerable Ethnic Minority Communities Affected by the Song Bung 4 Hydropower Project in Quang Nam Province (ADB) – Song Bung Dam

2.4 References

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CHAPTER 3. PARTICIPATION IN RESETTLEMENT DECISION-MAKING BY DAM-DISPLACED VILLAGERS

Despite incremental improvements in the regulatory environment, researchers continue to report impoverishment for displaced residents in Vietnam. In this chapter four ethnic minority villages in Quang Nam province, central Vietnam, are examined in order to identify outcomes of resettlement and contributing factors. Although villagers credited resettlement for improved infrastructure and strengthened social cohesion, a lack of productive replacement land decreased post-resettlement food security and caused residents to convert protected forest land to farmland. Residents were not allowed meaningful participation in decisions on resettlement housing and village location: Resettlement of two villages to a disaster-prone area necessitated subsequent relocation, while inappropriate housing led to the need to construct additional structures, consuming savings and productive land. In conclusion, a lack of real participation in dam resettlement decision-making, constrained by institutional hurdles and negative attitudes towards ethnic minorities, as well as insufficient land provision, remain critical factors in effecting poor outcomes.

3.1 Overview

As noted in Chapter 1, the majority of those resettled due to dam construction are reported to suffer at least temporary impoverishment (see Cernea, 2000; De Wet, 2009; Scudder, 2008). While most displaced populations receive some monetary compensation for lost homes and property, compensation is often inadequate or delayed, and if they lack knowledge about investment in productive assets, the money may be squandered. Although replacement land is commonly allotted to displaced people, it is often less fertile than the original river-fed plots, distant from new settlements, or land that has been appropriated from original residents without adequate compensation, causing conflict between host and resettled communities. Residents may lack the skills needed to adopt new livelihood practices such as animal husbandry or wet-rice farming at their new sites. Even when initial monetary compensation is adequate, funding and assistance linked development projects generally cease after the project's 5-10-year span is ended, and living conditions often deteriorate thereafter.

In response to these problems, international financial institutions (IFIs) like the World Bank and Asian Development Bank, which had been major lenders for large-scale dam projects, began revising criteria for investment and lending for dam construction in the 1980s and 1990s, augmenting conventional economic cost-benefit analysis with environmental impact assessments that included appraisal of potential socioeconomic impacts on affected populations and formulating resettlement guidelines and policies.

The underlying objective of the guidelines has been to ensure that resettled populations are able to restore or exceed previous living standards, assuming that any assessment of loss must also account for lost

opportunity income during the resettlement and recovery period (Cernea, 2008). However, in recent years, opinion has shifted away from merely replacing lost income and towards repositioning resettlement as a type of comprehensive development project. According to the revised resettlement safeguards adopted by the Asian Development Bank in 2009, resettlement should be regarded as an integral part of project design, and resettled populations "should be fully informed and closely consulted on resettlement and compensation options."

The report of the World Commission on Dams, Dams and Development: A New Framework for Decision-making (2000), included strategic priorities for dam policy decision-making that have greatly influenced subsequent large dam projects. The WCD report identified five key values that should guide dam project implementation: participatory decision-making, equity, efficiency, accountability and sustainability. It recognized the rights of affected people as including the right to enter joint negotiations on mitigation, resettlement and development (2000). The WCD recommended prioritization of development needs and objectives over compensation aimed at recovering prior standards of living, and it proposed that "those groups facing the greatest risk from the development have the greatest stake in the decisions and, therefore, must have a corresponding place at the negotiating table (p. 209)." Participation is particularly critical in regards to indigenous and tribal people, the report said, and key decisions affecting them should be based on their "free, prior and informed consent" (p. 216).

Cernea and other resettlement experts concluded that writing guidelines for individual dam projects has less overall impact than institutionalizing equitable compensation and resettlement practices in national policy and legislation, and in recent years many developing nations have enacted their own resettlement laws, particularly governing asset assessment. Yet recent research has identified a continuing discrepancy between the institutional safeguards and participatory ideals embodied in national law and their actual implementation at the local level. The initial research question for this study was whether an improved legal framework at the national level has translated into improved outcomes for dam-displaced residents of Vietnam, by examining four ethnic minority villages in Quang Nam province that were resettled in 2006 due to construction of a hydropower dam on the A Vuong river. This chapter will investigate the impact of resettlement on livelihoods and living conditions and identify factors contributing to the two most problematic areas for policy implementation in Vietnam, land provision and participation in resettlement decision-making. The chapter will discuss limitations to land allocation and public participation in the context of Vietnam's governance system and will conclude with recommendations for institutional approaches to improve inclusion of DPs in policy implementation.

3.2 Information about the research site

The research presented in this chapter was conducted from 2011 to 2013 at four villages, Aden and Tro Gung in Ma Cooih commune, Dong Giang district, and Cala and Alua in Dang commune, Tay Giang district, that were resettled due to construction of the A Vuong dam and hydropower generating facility in Quang Nam Province in central Vietnam. The total site population is 1,071 residents, of whom more than 95 percent of are from the Co-tu ethnic minority; non-Co-tu residents include schoolteachers and local officials as well as a few small-scale merchants. Aden and Tro Gung are located approximately 20 kilometers from the reservoir, far from the A Vuong river, while the Dang commune villages (Cala and Alua) are on the riverbank less than 2 kilometers upriver from the reservoir.

3.3 Results

The resettled households in Ma Cooih commune were each allocated a site measuring 400 square meters for residential land, while those in Dang commune, because they occupied a narrow riverbank site, each received only 200-250 square meters of land (Asian Development Bank, 2007). Each site, containing two villages, was provided with roads, a primary school, piped drinking water, and electricity, and Cala village contains a medical clinic staffed by a doctor and medic.

A total of 330 households were resettled, and an additional 50 households lost land due to dam construction. According to government records, each resettled household was compensated an average of 448 million dong (approximately US$20,000 as of May 2012) for land, house and other assets (Asian Development Bank, 2007), funded by the parastatal utility company, Vietnam Electricity (EVN). However, villagers in Ma Cooih commune reported much lower amounts, claiming to have only received 75 million dong (US$3,348) for compensation for their homes and additional compensation for land, crops, fruit trees and other assets that ranged from 700,000 to 150 million dong (US$6,696). Several meetings were held in each village to discuss resettlement and make site selection and other decisions, according to the district People's Council head for Dong Giang district (personal conversation, 2012).

By law the villagers were entitled to "discuss or comment on" decisions related to compensation for infrastructure or resettlement (Decree No. 79/2003/ND-CP, Chapter IV Article 10 No. 7), and 116 of 120 responding householders in Ma Cooih commune indicated in the 2012 household survey that they had attended pre-resettlement meetings sponsored by the district government. However, the headman of one village stated that villagers didn't know about specific details and left site selection to the elder who recommended the site. In meetings people just listened; few raised their hands to speak, he noted (2012). Each village was offered a selection of two sites for resettlement, mainly uncontested or abandoned land, which facilitates the process of land provision. Village and commune officials visited both sites at least once before making their choice. According to one Ma Cooih commune village head and an elected elder,

the selected site was in nearer proximity to the forest for easy access to firewood, and it featured level land that was easier to build homes on.

The households were resettled as village units, with single-family 40-50-square-meter concrete block homes on 1.85-meter-high piles, of uniform size and construction, contracted to a local private contractor. The householders were provided with limited choices of housing style; many expressed dislike of the elevated construction of their new homes as being impractical and dangerous for families with elderly members or small children. Said one young male resident: "We were told that we could select a Kinh or Co-tu style house. Most wanted a low Kinh-style house but the government officials said that it would be better to build a Co-tu-style house (on piles) to maintain our traditions."

3.3.1 Housing and land dissatisfaction

In interviews most residents expressed dissatisfaction with the quality or comfort of their homes. Due to lack of space and perceived discomfort or inappropriateness for the elderly many residents built additional structures for cooking or sleeping by employing savings and assistance from nationwide housing support measures. This reduced the land available for home gardens and depleted compensation funds. The wooden stairs of many residents' received homes became battered by storms and detached toilets suffered plumbing and mechanical breakdowns (in the questionnaire 93 of 119 households in Ma Cooih commune reported that their toilet, stairs, or both had been broken). None of these households received compensation or assistance for repairs, and many residents now defecate in nearby fields or streams. Securing adequate water supplies for drinking and irrigation was also cited as a pressing problem by a March 2012 focus group in Aden, Ma Cooih commune.

The greatest source of dissatisfaction, however, was with the land (see Table 3.1). Prior to the move, the villages had been sited beside the river, where land was fertile and well-watered enough for paddy rice production, but the upland replacement plots were less productive. According to the villagers in a 2012 focus group in Ma Cooih, the productivity of their new plots has diminished each year since the move, with rice and cassava harvests halved from pre-resettlement levels in volume per hectare. Much of the land near the resettlement villages has been designated as protected forest land, unavailable for cultivation, and villagers have been directed to practice sedentary farming on the plots they received, but to increase production many villagers continue to practice shifting

Figure 3.1 Swidden plot after burning

cultivation on protected forest land, exacerbating local deforestation and habitat loss for endemic wildlife (see Figure 3.1).

Table 3.1. Focus group ranking of post-resettlement problems

	Aden	Tro Gung
1)	Shortage of land for cultivation	Shortage of land for cultivation
2)	Livestock morbidity	Lack of irrigation for paddy fields
3)	Lack of fresh water, especially in dry season	Lack of fresh water during dry season
4)	Hunting is restricted	Need for adaptive seed varieties

Source: Focus groups in Aden village, March 13, 2012 and Tro Gung village, January 13, 2012

The amount of land initially received in compensation, including upland plots and paddy fields, was deemed insufficient by villagers due to its poor productivity and their lack of access to fertilizer or manure. According to Tay Giang district officials, of the total of 126 households in Dang commune, 45 of them, comprising 196 persons, did not receive the total amount of agricultural land and/or residence that had been promised by the hydropower authority (personal conversation, 2011). According to one online media report ("Quang Nam's hydropower plant," May 31, 2012), the dam authority promised each household 1.5 hectares of land for agricultural production but in fact they were only provided 0.2 hectares. According to household survey responses, however, most of the villagers in Ma Cooih commune now farm between 1-2 hectares of upland plots and 0.7 hectares of paddy fields. The additional land includes pre-resettlement plots and those developed subsequently through clearing forests or unclaimed land.

3.3.2. Livelihood impacts

Villagers formerly relied on riverine fisheries for supplemental food supplies, but fish stocks in the river declined after dam construction and villagers were not allowed by the district government to fish or farm in draw-down reservoir areas due to dam authority concerns about pollution of water stocks (conversation with District Party secretary, 2011). Many villagers noted that although they grew vegetables in their original sites they now were forced to mainly rely on less nutritious cassava as a secondary food source (Figure 3.2), particularly during pre-harvest periods when rice supplies were depleted. Said a village headman: "Food sufficiency was better before than today. We could catch fish and save it for the months when food was short but now we often lack sufficient food. We can't go into the forest to get food to eat and we try to fish but can't catch much, so food supplies are unstable."

As shown in Table 3.2, agricultural production has worsened as compared with prior to resettlement, both in terms of harvest volume and growing times. The soil is unproductive clay soil, according to residents requiring several applications of chemical fertilizers. Livestock production, primarily cattle and buffalo, pigs and poultry, also declined after resettlement. Livestock is regarded as an important revenue source and

conserved for offerings for marriage and traditional rituals, but high morbidity rates, a lack of suitable land for grazing, and insufficient animal shelters and a lack of feed has constrained production. In the 2012 questionnaire only 13 of the 76 households in Aden and 12 of the 45 households in Tro Gung reported ownership of one or more pigs.

Table 3.2. Comparison of agricultural production prior to and after resettlement, Tro Gung

Crops or livestock	Prior to resettlement: Remarks	After resettlement: Remarks
Vegetables: Cucumber, pumpkin, gourd, cabbage	Planted in December	Not grown
Watermelon	Planted in December	Not grown
Upland rice	10-12 cans of grain for 1 can of seedlings	5-6 cans of grain for 1 can of seedlings
Cassava	Takes 1 year before harvest (diameter of root is 10 cm). Can plant 10,000 plants per ha.	Takes 2 years before harvest (diameter of root is 10 cm)
Maize	Planted 3 times per year	Not grown
Bananas	Several varieties grown, one mother trees produces 15 young trees	Can only grow 1 variety. Doesn't produce many young trees. One bunch sells for 10,000-15,000 VND
Pineapple	Not grown	Grows slowly, produces few young trees. Size of fruit is decreasing each year.
Paddy rice	Fertile, well-watered paddy fields beside the river	Poor irrigation so only 4 households can grow rice, productivity is decreasing
Livestock	Every family bred cows, raised pigs and chickens	Only 10 households breed cows, similar number have pigs, many own chickens. Most livestock have died of disease.

Source: Focus group meeting, Tro Gung, January 13, 2012

Figure 3.2 Agricultural activities. From left, top: Cow grazing beside the road, cassava roots, water buffalo; bottom: paddy fields, upland fields, homegarden

The self-reported assessments reported above and indicators compiled from household surveys (see Appendix B) are visually represented in Figure 3.3 by a radar chart depicting capital assets for Aden and Tro Gung villages in Ma Cooih commune on a 10-point scale. The greatest differences in conditions before and after displacement is the decline in natural capital, particularly arable land and access to forest and fisheries, and lesser improvements in physical and financial capital due to improved infrastructure, compensation funds and an increase in cash crop production.

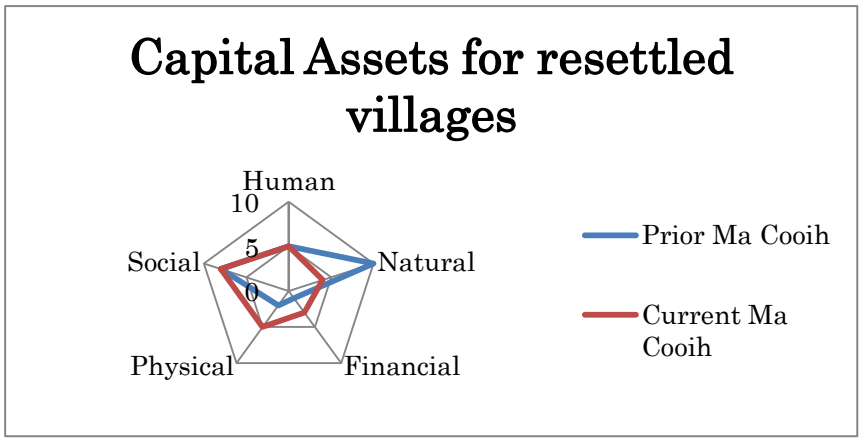

Figure 3.3. Changes in capital assets of resettled villages in Ma Cooih commune

Indigenous ethnic minorities in Vietnam generally report high rates of poverty. A team of economists led by Baulch in 2002 found that minorities in the Central Highlands had the lowest levels of education and household income of any surveyed Vietnamese ethnic groups and that improvement in income had stagnated since the economic reforms of the previous decade, although averages for all other groups had risen. According to the ADB Rapid Appraisal Report (2007), the average poverty rates for the two communes under study in 2006 were 68 percent for Ma Cooih commune and 65 percent for Dang commune. According to an official with Ma Cooih commune, approximately 70 percent of the commune was designated as "poor" as of June 2011, while the remaining 30 percent were "near-poor" (from personal conversation with Phan Huy Tuan, June 27, 2011). For the resettled villages the percentages are even higher, with 92 percent poor and 8 percent near poor in Aden and 94 percent poor and 6 percent near-poor in Tro Gung as of 2012, according to the headmen of the two villages (2012).[2] These percentages have not changed significantly in recent years.

3.3.3. Natural disaster risk and land use

Since resettlement to the narrow riverbank sites in 2006, the Dang commune villages of Cala and Alua have suffered from severe erosion and mudslides during the annual rainy season. The elected headmen and

[2]The official poverty line for rural areas in Vietnam is 400,000 VND per person per month, while those with per capita monthly income of 401,000-520,000 are "near-poor." The official nationwide poverty rate is 14.2 percent (World Bank, 2013).

a few residents of the villages visited two proposed sites before resettlement, but there were varying reports on how the final siting decision was reached. District officials stated that the villagers chose their current site due to its proximity to the river. One villager agreed, but he professed to not knowing about the site's high risks of erosion and storm-linked mudslides and of having limited time to decide. Two other villagers claimed that the site was not the villagers' choice due to its potential disaster risks, but that it was selected by the hydropower authority because it contained valuable timber that the hydropower authority could log for additional income before constructing the village.

A storm in 2009 caused the destruction of eight homes in the two villages (personal conversation with district people's committee secretary, 2011). In November 2011, a student dormitory and a commune office building in Cala village were destroyed by a landslide during heavy rains, although because the storm occurred on a weekend there were no injuries or loss of life. Recognizing the continuing disaster risk, local commune and district officials began negotiations with the householders in 2010 about relocating to new sites located several kilometers from the river. However, many villagers resisted the new move, citing inadequate compensation and lack of infrastructure at the new sites. This time, financing for relocation would need to come for the district's straitened coffers, rather than as part of the dam construction project as before, according to the district people's committee head (2010). Although district officials were negotiating with the hydropower dam authority to offset some of the relocation costs, the move would not be officially categorized as a dam resettlement initiative but simply as a poverty alleviation development project; thus relatively generous resettlement project compensation conditions would not apply. Villagers, while cognizant of future landslide risks, resisted the move and insisted on receiving compensation similar to amounts offered during their previous move. Despite frequent meetings of village residents and commune and district officials, the two sides remained at odds through early 2012, with one villager saying: "We'd rather die here than move to the new site if our conditions aren't met. We want to see the money in our hands before we consent to moving."[3] (Due to the contentious relations between residents and local government and concerns about potential conflict, the author and collaborating researchers were denied permission to visit the Dang commune sites from early 2012, necessitating a subsequent focus on the Ma Cooih commune villages.)

3.4. Discussion: Participation and governance

According to a World Bank document by the Independent Evaluation Group (2011), the seven factors that determine whether resettlement projects succeed include government or agency commitment, a strong

[3] According to village leaders, both villages moved to new sites in late 2012 (personal communication, 2014), with a budget of 30 million dong allotted for each household to cover the costs of moving, infrastructure construction and land preparation. No compensation was paid.

implementing agency, an appropriate legal framework, comprehensive planning, development programs that support livelihoods after the move with land and irrigation schemes, community involvement and local leadership, and realistic cost estimates. Local government provision of productive replacement land, livelihood training and community participation are particular sources of concern in Vietnam.

A 2006 study of the impacts of the Son La dam project by the Vietnam Union of Science and Technology Associations (VUSTA) identified as two major problems the "serious shortage of qualified and trained personnel at district-level Resettlement Management Units," and the shortage of sufficient arable land, making it difficult to fulfill the promise of "land for land" compensation (International Rivers, 2006). Land is a scarce resource in mountainous Vietnam. According to the World Bank (2002), although 80% of the population lives in rural areas, there are only 1,200 square meters of agricultural land per person, one of the lowest per capita volumes in the world. Said one district administrator involved in the A Vuong dam project, "land and livelihoods have been the biggest problems." Another bureaucrat admitted, "We lacked the money to purchase enough productive land" (personal conversations, 2011).

Research on other dam resettlement projects in Vietnam has identified the loss of land as the single greatest impediment to recovery (see Bui and Schreinemachers, 2011 and Dao, 2010). Ethnic minority populations are growing (from 13.8 percent in 1989 to 14.3 percent of the population in 2009), as they generally have higher fertility rates than the Kinh Vietnamese (Amin and Teerawichitchainan, 2009). In addition, government-supported migration of lowland Kinh residents to highland areas has increased, with ethnic minorities now estimated to account for only one-third of the total population of the Central Highlands, an area that was once nearly exclusively settled by indigenous minority residents (Scott and Truong, 2004). Increased population density in mountainous regions with limited arable land challenges the capacity of local governments to secure sufficient replacement land despite their legal obligation to do so.

Researchers have long criticized implementation of Vietnamese national policies by local governments and poor community involvement (see Dao, 2010; Fritzen, 2006; Kerkvliet, 2004). The strong centralized control retained by the Vietnamese Communist party, noted Friederichsen (2009), has set up many obstacles to achieving participatory community-based development, including a lack of incentives for local bureaucrats to make decisions that may conflict with higher-level policies, a lack of capacity due to poor training of local officials administering village-level development budgets, and a lack of an independent body for adjudicating grievances involving local officials. Fritzen (2006) blamed the sketchy success of decentralization efforts in recent years on resistance by central government to devolving decision-making authority to local bureaucrats and poor local governance capabilities. A 2002 survey by the National Institute of Administration found that more than three-fourths of People's Council and People's committee officials lacked specific training for the positions to which they had been assigned (Kerkvliet, 2004). Local officials are often squeezed between the need to implement national or province directives and conflicting desires of local residents.

In Vietnam, local government functions at the village, commune, district and provincial level. A commune contains several villages, and each village has an elected head and vice-head as well as an appointed administrative head. Commune officials are often local residents, but they tend to have little direct authority. Village heads may have the support and trust of village residents, but there are no laws specifically laying out their administrative roles and authority (Kerkvliet, 2004). In the case of the Quang Nam villages, involvement by commune officials was limited to a few agricultural and livelihood initiatives after resettlement.

As traditional Vietnamese folk sayings like "The emperor's rule stops at the village gate" (quoted in Fritzen, 2006) suggest, local implementation of directives from the administrative center has traditionally been influenced by local contingencies and the will of provincial bureaucrats. In the case of hydropower dams in remote highland areas, where most of the generated electricity and revenues flow to coastal cities while adverse environmental and socioeconomic impacts are borne locally, provincial governments may lack enthusiasm for rigorous project implementation. The prospects for meaningful participation in the case of development project decisions for indigenous ethnic minority communities are further reduced by the local bureaucrats' distrust of the ability of residents to act in their own best interests and the passivity often evidenced at village-level meetings. Scott, Miller and Lloyd (2006) write that "negative attitudes towards ethnic minorities and a devaluing of indigenous knowledge persist" (p. 32), making it more difficult for minorities to assume active roles. One district official admitted that local residents' involvement in decision-making was inadequate when he said: "We should have given more rights to the people and we should have done more to prepare the new sites. The government doesn't need to build houses for people; let them build them by themselves (2011)."

The Vietnamese government has formulated a series of nationwide poverty alleviation efforts aimed at ethnic minorities to overcome expanding income inequality between majority Kinh and ethnic minorities during the past two decades of fast-paced economic growth (Glewwe, Gragnolati and Zaman, 2002). Projects like the nationwide Program 135 have targeted the poorest villages (many of them predominantly ethnic minority communities) in an effort to raise living standards and foster livelihoods. However, according to an Asian Development Bank project report (2010, p. 7), "the ways in which the government has given this support has promoted dependency, low self-esteem and passivity, rather than promoting empowerment, social capital and capacity in the villages." For example, as Fritzen (2006) explains, Program 135 cedes authority for decisions on investing funds to province and district officials rather than commune or village-level officials and residents, who may be considered unable to make educated decisions. According to the 2010 ADB report, behind this practice is a "patriarchal approach" that considers ethnic minorities as "victims rather than actors in development" who need help to catch up with the majority Kinh. The desirability of ethnic minorities adopting majority Kinh values and practices is implicitly recognized by legislation such as Decree No. 79/2003/ND-CP, which promotes village participation in "building a civilized lifestyle, maintenance of security and order, abolition of bad practices, superstition and social evils" (Article 7, No. 2).

As researchers have noted in books like Participation: The New Tyranny (2001), the discourse of "participation" can veil an underlying asymmetry of power and information that handicaps poor residents, limiting the potential for their meaningful inclusion in decision-making. Certainly, most dam resettlement is inherently involuntary, and as De Wet wrote (2009, p.79), infrastructure projects involving forced resettlement "simultaneously promote and undermine human well-being," benefitting the majority but violating the human rights of displaced populations. Chatty and Colchester (2002, p. 11) present a typology of participation by indigenous peoples in development projects that ranges from passive participation (unilateral announcements by project management) and participation in information-giving to interactive participation and "self-mobilization," in which residents take their own initiative to change systems. In the case of resettled ethnic minorities, passive participation often occurs due to language difficulties, low levels of education and expectations of passivity by local officials (Ha, 2011).

In research on residents from varying ethnic minorities in northern Vietnam who resettled due to the Son La dam, Ha found that those from minorities with relatively lower earnings and education to start with tended to speak less and ask fewer questions at meetings and later were found to have poorer post-resettlement living conditions than other ethnic group members. Ha wrote, "Resettlement without people's participation may lead to unsuitable rehabilitation strategies and increase problems later if not dealt with at the onset."

Discussions with both residents and local officials at the A Vuong dam site revealed great discrepancies in the discourse concerning the resettlement process, not only in terms of the amount of compensation given but also in identifying those primarily responsible for decision-making. Dozens of meetings were called by district and commune officials in each village before and after resettlement, and villagers were asked for their preferences in housing style and village location but according to the DPs the final decisions were invariably influenced by local officials' preferences. The residents' limited information and scope for selecting or constructing their own homes resulted in reduced landholdings and truncated savings and uninformed or unequal participation in siting decisions contributed to failed resettlement for two villages. In Table 3.3 the outcomes for resettlement are compared with the recommendations for resettlement practice detailed in the 2000 World Commission on Dams report.

Table 3.3. Discrepancies between policy and practice

	WCD 2000 Report resettlement guidelines	Reported implementation
Compensation and assistance	Compensation at market value (houses, assets)	Compensation received by most, but below market value
	Improve or restore former living standards, earning capacity	Below former standards, although slowly improving for two villages; other two villages resettled due to disaster risks
	Minimize distance to previous site	Some can walk several hours to previous cultivation plots; too far for others
	Promote participation in resettlement planning	Villagers attended meetings but few choices in site selection, house styles
	Residents should share in benefits of project such as electricity, irrigation	Have electricity but no irrigation or adequate water supplies
	Need to provide training in new agricultural practices or livelihood skills	Introduced new crops and livestock and some training but little non-agricultural training
Institutional framework	Move communities as viable settlement systems	Yes, stayed in original community groups
	Ethnic minorities should receive adequate land, infrastructure and compensation even if lacking legal title	Compensation based on cultivation of land as well as land usage rights, but amount of land is inadequate. Infrastructure is improved.
	Need legal framework that institutionalizes compensation, grievances	Reformed laws and policies govern dam resettlement, but grievances go through administrators
	Conduct environmental impact assessment (including social impact analysis)	EIA only focused on reservoir, not downstream or social impacts
	Legal protection of land that is provided	Yes, land usage rights for small plots
Participation	Affected people should feel that they participated in the process	Held meetings to receive agreement of residents prior to move, but decision-making authority was limited
	Free, prior and informed consent is needed for resettlers	Met with villagers and improved compensation offers before move, but little information provided

This experience suggests that affected populations be institutionally included in critical resettlement decisions. Communities should be kept intact and housing and site preferences should be respected. One model for villager participation is the approach adopted by the Song Bung 4 hydropower dam project in neighboring Nam Giang district of Quang Nam province (see Chapter 6). In this project, which was funded by a loan from the Asian Development Bank, project implementation conformed to ADB involuntary resettlement safeguards, which stipulate that the displaced be fully informed about entitlements and resettlement options; that they participate in planning, implementation, and monitoring and evaluation of resettlement programs; that vulnerable groups, particularly those without land, the elderly, women and children, participate in consultations; and that a mechanism be established to resolve grievances. Other provisions prioritize consideration of cultural aspects that impact resettlement of indigenous ethnic groups

(Asian Development Bank, 2009). At Song Bung 4 these provisions, many of which are stricter than those stipulated by Vietnamese law, were applied by holding frequent multi-stakeholder workshops and establishing a resettlement management implementation unit of four full-time staff who worked with commune officials, affected residents and development groups to implement resettlement and an elected, gender-balanced group of 15 affected people at the village level to conduct meetings, share information and resolve conflicts over compensation or other matters..

3.5 Summary

As the case study in Quang Nam province suggests, marked improvements in national law and policy governing compensation terms and post-resettlement support in Vietnam have not been accompanied by improved implementation and outcomes at the local level, particularly in terms of productive land and opportunities for participation in decision-making. In response to research question 1 – What factors impede successful adaptation and improved livelihoods and living conditions? (see Chapter 2.2), inadequate land provision, poor access to common resources and poor participation in decision-making were the most serious impediments. Although residents at the case study sites value improved infrastructure and access to education and health care, they found fault with poor quality housing and food insecurity, as domestic livestock has failed to thrive, rice yields have fallen and river fisheries have declined. The inability to secure arable land has also led to environmental degradation, as farmers have destroyed protected forests for conversion to agricultural plots.

Although the district government offered villagers limited input in resettlement decision-making, they were constrained by poor site or housing selections. Provision of inappropriate housing led residents to devote land and scarce financial resources for home modifications and supplemental construction. In one case, a lack of informed participation by residents led to a failed resettlement in an area prone to natural disasters. It is clear that unmet expectations can cause lingering resentment by local residents of government intentions and cloud prospects for environmentally and economically sustainable development. Institutionalization of participation through early information provision, frequent stakeholder meetings and village-level resettlement and development units can help residents voice concerns and identify priorities for community development.

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CHAPTER 4. COMMUNITY RESILIENCE AFTER RESETTLEMENT

The continuing problem of post-resettlement impoverishment suggests that external aid and financial support for individual households must be supplemented by strengthened community-based resilience. In order to understand more about the innate resources of displaced rural communities, the author applied a community resilience approach to the two resettled Co-tu ethnic minority villages in Ma Cooih commune to identify their community capitals and their application in improving livelihoods and living conditions. Results suggested that weak human and financial capital constrained the ability of the resettled residents to adopt new livelihoods or migrate to seek employment. Reduced forest and river access also problematized a flexible response to a lack of agriculturally productive land. However, since village units remained mainly intact after resettlement, traditionally strong village affinity and social networks were retained. In addition, indigenous skills such as housing construction, honed by a highly mobile traditional lifestyle, allowed residents to construct culturally significant structures like community houses and modify or augment received housing stock. These elements of social and cultural capital eased the process of post-resettlement adaptation. The author concludes that governments should reassess current resettlement policies that prioritize financial compensation and economic measures for rehabilitation and incorporate awareness of the adaptive resilience and limitations fostered by indigenous knowledge and practices.

4.1 Overview

Many governments and International financial institutions have enacted legislation or guidelines to ameliorate the harm caused to those uprooted from residence, land and community by construction of dams, roads and other infrastructure. Most regulation focuses on favorable terms of compensation, livelihood assistance, and reformulation of resettlement as a sustainable development initiative that can improve living conditions for displaced residents. However, although "community disarticulation" is one of the eight risks of displacement posited by Cernea's influential impoverishment risks and reconstruction model (2000), less consideration has been paid by researchers to non-economic factors and community-based resilience after resettlement.

How do communities employ innate resources to adapt and improve their lives after forced resettlement? This chapter describe the composition of community capitals, with emphasis placed on social and cultural capital, and discusses how these capitals have been utilized to improve living conditions and via livelihood strategies, with attention also paid to adaptive limitations of indigenous practices and beliefs. The chapter concludes by discussing implications of this community resilience approach for resettlement policy in Vietnam and internationally.

4.1.1 Defining community resilience

The concept of "community resilience" has been defined both in terms of individuals' perceptions of local adaptation and robustness (see Kimhi, 2004 and Pfefferbaum, 2005) and comprehensive assessments of a community's capacity to cope with shocks or disturbances (Maguire and Cartwright, 2008). For this chapter I will apply the definition adopted by Norris et al. (2008, p.131): "a process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance." Although the term has been frequently applied to communities impacted by or at risk from natural disasters (see Paton et al., 2001, Cutter et al., 2008, and Joerin and Shaw, 2011), most definitions do not confine its use to natural disasters, instead referring to "stressors," which Norris et al. (2008, p. 131) defined as "aversive circumstances that threaten the well-being or functioning of the individual, organization, neighborhood, community or society." Community resilience has been used to describe local responses to political upheaval (see Abramowitz, 2005), traumatic loss (Walsh, 2007) and high levels of violence (Amed et al., 2004). In recent years the concept has also been applied broadly to include local response to terrorist attacks (e.g. USDHS, 2011). It can be argued that, even though planned and often anticipated by affected populations, displacement functions as a stressor equivalent in severity to those posed by many types of manmade or natural disasters. Indeed, Cernea has likened forced displacement to "the cultural-economic equivalent of a major earthquake" (2003, p. 40).

4.1.2 Community capitals and their utilization

The concept of resilience originated in studies of ecological stability and dynamics, originally used to describe the capacity for an organism or community to return to its pre-disruption functioning (Norris et al., 2008) but as Folke (2006) notes, social and ecological systems often must undergo change and adaptation to remain viable, manipulating, renewing or developing structures and processes in an "adaptive renewal cycle" (Gunderson and Holling, 2002). Accordingly, a resilient community needs to develop the ability to adapt to and manage change and large-scale transformation by utilizing its internal and external resources (Birkes and Ross, 2013). These resources, also described as "community capitals," (Flora et al., 2004), include natural capital, human capital, financial capital, political capital and social capital. Yet developing and maintaining these forms of capital is not sufficient for community resilience to be achieved: as Magis (2010, p. 410) writes, "Developing community resilience requires action taken, not simply the capacity to act." In resilient communities resources are operationalized through individual and collective efforts in order to sustain and energize the community (USDAFS, 2011).

To understand how community members utilize their resources and respond to change we must also consider the operant institutional framework, laws and policies and the possible strategies that individuals adopt to improve livelihoods. A theoretical model that has been widely applied in rural contexts to understand a community's resources (or capitals), its legal and administrative context, individual livelihood strategies and resulting outcomes is the sustainable livelihoods approach (SLA) developed by

Scoones (1998) drawing on concepts espoused earlier by Robert Chambers and Gordon R. Conway. This approach, which regards individuals as dynamic actors rather than passive subjects of change and development, has been used to assess community resilience to impacts of climate change in arid regions (Osman-Elasha et al., 2006) and to analyze pre- and post-resettlement livelihoods of households resettled due to hydropower dam construction in northwestern Vietnam (Thi and Schreinemachers, 2011), among others, but in chapter will apply a slightly modified SLA approach to examine indigenous practices, village-based identity and other cultural attributes as significant factors in the formation of resilient communities (see Figure 4.1).

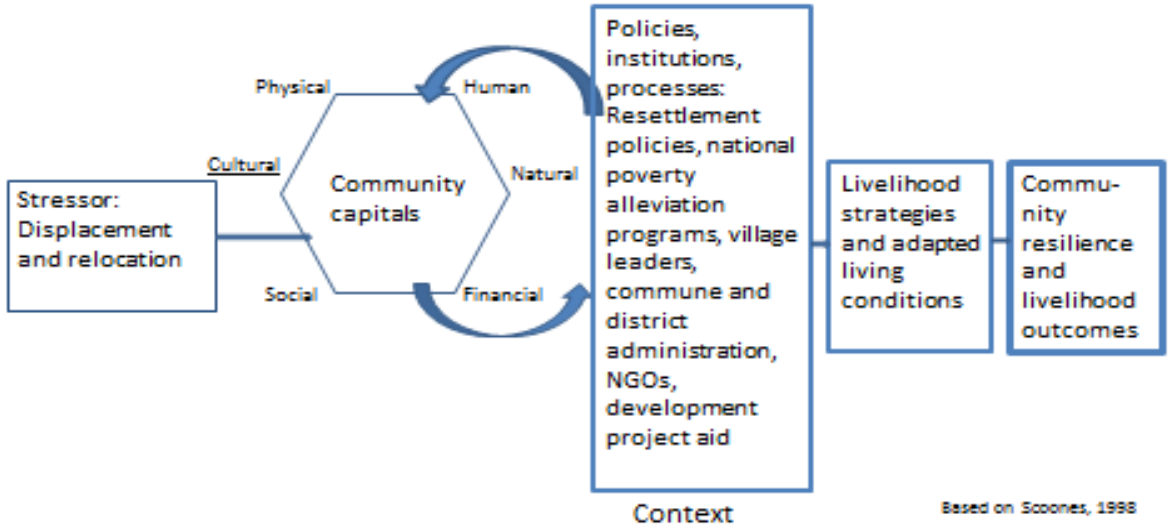

Figure 4.1. Adapted Sustainable Livelihoods Approach model of community response to displacement

Many nations with ambitious hydropower generation goals, including Vietnam, China and India, have enacted laws or guidelines governing resettlement compensation and post-resettlement services, with most prioritizing land-for-land and/or cash compensation and provision of housing, infrastructure and services in order to restore the previous level of livelihoods and living conditions. However, few national, intergovernmental organization or industry association involuntary displacement guidelines include consideration of the need to protect and maintain social or cultural attributes that may enhance post-resettlement adaptation. The African Development Bank's involuntary resettlement policy is unusual for proposing that "provision must be made for cultural sites and social/psychological concerns" by resettlement plans (2003, p. 7). As the case study site described here consists of two Co-tu ethnic minority villages formerly situated in a remote mountain location with little contact with the ethnic majority Kinh

Vietnamese, indigenous traditions and practices have exerted continuing influence on living conditions, livelihood strategies and other adaptive responses to displacement and resettlement.

A "community" is a social construct, variously defined as constituting block groups, urban districts, counties and other units (Sherrieb, 2010). This chapter identifies the two adjacent villages (*thon* in Vietnamese) of Aden and Tro Gung as two discrete communities. As mentioned in Chapter 1, village affiliation is extremely important among the Co-tu. In the past, despite frequent changes of location Co-tu village identity remained constant, as did the village name, which typically referred to the place where a village was first established. The study villages, Tro Gung and Aden, bear the same names as the original inundated villages, although Aden includes several residents from an adjacent village, Ta Reng, which was dissolved after resettlement. The villages were resettled to a location near two streams known as Cutch and Run; the new resettlement site is thus known as Cutchrun, although the residents tend to use their original village names.

4.2 Assessment of community capitals and indicators

The innate resources possessed by the residents of the two resettlement villages after displacement are described below, categorized as physical, natural, financial, human, social and cultural capital. A description of each category and relevant indicators can be seen in Table 4.1. No quantitative comparison with their pre-displacement status could be made, but villagers were asked in the survey and in household interviews for subjective assessments of changes in livelihood and living conditions. Because this paper focuses on social and cultural endowments, the other types of capital will be described in brief.

Table 4.1. Capital assets

Capital Assets	Include
Human capital	Health, nutrition, education, knowledge and skills, capacity to work, capacity to adapt
Social capital	Networks and connections, relations of trust and support (bonding), formal and informal groups, leadership, shared values
Natural capital	Land, crops, water, forest resources, wildlife, biodiversity, environmental services
Physical capital	Infrastructure, tools and technology, household assets
Cultural capital	Indigenous practices, rituals, shifting cultivation, crafts, construction, identity
Financial capital	Savings, credit and debt, remittances, pensions, wages

4.2.1 Physical and natural capital

According to interviews and survey responses, natural and physical capital both changed greatly after resettlement. When asked how living conditions have improved, the 120 survey respondents universally

cited improved infrastructure, notably provision of electricity, roads, and a primary school; 57 also noted greater access to nearby towns and villages. However, they also expressed concern about poor quality housing, impassable roads due to mudslides during the rainy season, high electricity costs, the remoteness of the nearest medical clinic, which is 10 kilometers away, and the difficulty of bringing children to distant secondary schools. In the survey, 93 of the 120 households reported that either their toilets or external staircases, or both, had been rendered unusable. The majority of residents had repaired or replaced the staircases themselves but were unable to repair the toilets, forcing them to defecate in the stream or fields.

In the December 2012 survey, when asked about changes in living standards since resettlement, 56.8% responded that living standards were neither better nor worse overall, 2.7% indicated improvement and 40.5% reported that living standards have deteriorated. Several respondents explained that improvements in infrastructure and services were balanced by declines in food security. The greatest current problems, in order of response frequency, were land quality, livelihoods, amount of land and ease of accessing natural resources.

In focus group meetings, the top concerns since resettlement were with soil productivity and environmental services. In order of frequency, they cited the poor quality and quantity of arable land, lack of irrigation for rice paddies, high livestock morbidity and poor water supplies during the dry season. Cassava, the main cash crop, now takes two years to harvest in upland plots, rather than one year as before the move, and rice yields are reported to be half pre-displacement levels (focus group, Tro Gung, January 2012). Forest cover has declined due to illegal logging and conversion for agricultural use, both for plots designated for sedentary agriculture received from the hydropower authority and due to self-initiated clearing and burning of foliage by villagers who were unable to produce enough crops to secure food security with their designated plots. They reported a concomitant decrease in wildlife available for hunting, while local fisheries declined after dam construction. While 14.2% practiced hunting before resettlement, only 6.7% currently hunt wildlife (hunting of large or endangered animals is officially forbidden). In addition, villagers were not allowed access to the dam reservoir for fishing and their new site is far from the river. The villagers were allotted some paddy field land beside a stream, but the land is poorly watered so rice yields are low.

While villagers received some livestock from NGOs following district training courses in animal husbandry, most of the livestock died from disease. Villagers claimed to own a total of two cows, two water buffalo and four pigs at the time of the 2012 survey. Fresh water provision was also a casualty of resettlement, as water pipes from the adjacent stream, which fed into central tanks, have broken in several locations. In the survey 116 of 120 respondents cited more arable land as their principal need, followed by support for raising livestock and access to fishing in the reservoir.

4.2.2 Financial and human capital

Most of the cash compensation received by displaced households in 2006 was spent on motorcycles, televisions, furniture and other household durables rather than invested in land or other productive assets. Only four reported that they have savings or financial assets in the 2012 household survey. Twenty-three households receive monthly disability payments, and 15 receive monthly pensions or veterans' benefits; other sources of non-farm income are from irregular manual labor, particularly for road or housing construction for local dam projects or harvesting cane or acacia for state forest enterprises. A few village officials, such as the village headman and vice headman, receive nominal government wages. Based on self-reporting in 2012, mean monthly household income is 660,614 VND (US$31.52), with 92.8% officially identified as "poor" (which the government defines as being at or below the rural poverty line of 400,000 VND per month per person) and the remaining 7.2% as "near poor" (401,000 – 520,000 VND).[4] This amount is cash income only, not including agricultural production for household consumption. Income inequality appears to be fairly negligible, but 45% indicated that wage differentials have grown since resettlement, with the most frequent comment (34%) being that "an intelligent, robust man will earn more than others," and an additional 6% noting that "those with regular salaries will have better lives." The latter remark is indicative of the fact that income is generally derived from non-crop-based sources. Although several villagers stated that "those in good health can earn more income," monthly disability payments are higher than reported income from manual labor, so households with disabled or retired members report relatively higher average household income.

The average level of education for household head and spouse is 5.7 years. Although nearly all children now complete primary school, few children advance to the distant high school or to university. No villagers report training in non-farm skills such as carpentry or mechanics. When asked about off-farm occupations, four said they market goods, one is a teacher, four work as local security guards, and several serve as village officers. Farming is practiced by all but one household, although some also hunt wildlife or practice aquaculture in household ponds. Other sources of income include construction, livestock production, sales of rattan and other non-timber forest products, and for a few, basket-weaving or rice husking.

Health has slightly improved overall since resettlement, with a decline in malaria reported after moving to a less remote and less forested location, but two villagers identified a decline in crop production and lower consumption of wild vegetables as contributing to increased malnutrition among children.

[4] This percentage compares with a 2011 national average poverty rate of 12% and a rate as of 2006 of 54% in Dong Giang district and 68% in Ma Cooih commune (ADB 2007), which contains three other villages besides the villages of Aden and Tro Gung.

Prior to resettlement villagers grew paddy rice in irrigated plots beside the river as well as rain-fed upland rice. For the Cutchrun residents, as for most Co-tu, paddy rice remains subordinate to traditional upland rice, cultivated by rotating fields approximately every six to seven years and burning off vegetation to enrich the soil. With shifting cultivation they have gained knowledge of growing crops in a variety of soils and locations. Due to a tradition of residential mobility, most villagers exhibit skills in constructing homes and community houses from bamboo and thatch they procure from local forests.

4.2.3 Social capital

Norris et al. (2008) define social capital in a community resilience context as including social support, social participation and community bonds. This includes attachment to place and sense of community, perceived social support and social embeddedness, or informal ties. This category also includes the related concept of "social support," which has been defined as the social interactions that individuals have with significant members of their community that embed them within a web of relationships that they can call upon in times of need (Kaniasty and Norris, 2000). Those possessing greater social capital have greater access to and control of valued resources such as wealth, power and reputation (Lin, 2001).

Social capital also refers to broader relationships between individuals and their communities, including organizational affiliation and leadership. It should be noted that organizational affiliation in a Vietnamese context is problematic as an indicator of robust social capital, particularly in rural areas, due to the existence of mass organizations, including the Farmers' Unions, Women's Unions, Youth Unions and Fatherland Frontier groups that operate in every village and municipality. These Communist Party-linked groups serve as conduits for government information, training and financial assistance, leadership opportunities and participation in development initiatives, so few villagers would reject the potential benefits that accrue from membership. As noted by Dalton et al. (2002), however, although this type of 'mobilized participation' differs from the prevailing definition of civil society, which assumes voluntary affiliation in groups that are autonomous of the state, membership in dynamic social groups like these can nurture interpersonal skills, provide leadership experience and strengthen local bonds. However, these village-level groups provide limited opportunities for access to status or influence beyond the village. In addition, elected Farmers' or Women's Union leaders may be quite young and not particularly influential, as the positions are considered to be time-consuming and not strongly contested. While all households report that members belong to one or more village-level mass organization, particularly the Farmers' Union, Women's Union and Youth Union, a minority (41.4%) regarded union membership as particularly helpful, with most citing as primary benefits food or cultivation assistance when families experienced health problems or other setbacks, and support for weddings and funerals.

Village identity continues to be an important source of continuity, with most villagers living beside neighbors from their original village, either Aden, Ta Reng or Tro Gung. The importance of village affiliation is underscored when word mining analysis was conducted for respondents' interview transcripts,

revealing that the most commonly mentioned nouns, in order of frequency, were "village," "land" and "rice." When asked about community cohesion in interviews, several noted that feelings of cohesion and social harmony had improved since resettlement due to closer physical proximity of homes in the new villages, averaging 12 meters apart in Aden. In particular they noted that domestic violence had declined, and that they spent more time than before talking with neighbors and other villagers. In terms of general relations, 117 of 119 respondents indicated that village relations were not greatly changed from before; two respondents felt that they had improved.

In March 2013 interviews, 17 respondents were asked to indicate their general satisfaction with their current situations, their lives before resettlement, and their expectations for five years hence, on a 0-10 scale, with 10 being "the best possible life for you," based on the Cantril Self-anchoring Striving Scale used by the Gallup Poll and other groups to assess subjective well-being. The mean response concerning current conditions was 4.0, while the mean response for pre-resettlement was 4.1. The mean response for five years in the future was 4.7.[5] While not statistically significant due to the small sample size, the larger figure for expected future well-being suggests a degree of optimism that livelihoods and living conditions will improve, and optimism has been regarded as a positive factor in honing personal and community resilience (Berkes and Ross, 2013).

Villagers are involved in a complex variety of interactions with neighbors, including daily chats; monthly meetings at the community house of unions or local government officials; occasional village rituals such as Tet or harvest celebrations; training courses with agricultural extension workers; and collective activities such as house-building, repairing the community house roof, acacia cultivation for village income, meetings with teachers, officials or NGO leaders and consultations with village elders or headmen. This frequent daily contact facilitates diffusion of new skills and information, such as prices paid by the Kinh traders who visited the villages by motorbike to purchase crops and goods. As another example, when one villager practiced new cultivation techniques such as green manure, neighbors were observed to adapt and implement the techniques autonomously.

4.2.4 Cultural capital

Although the term "cultural capital" was most prominently employed by the French sociologist Pierre Bourdieu to refer to the knowledge, skills, education and other attributes that confer power and status in society (Bourdieu, 1986), that usage nearly duplicates the meaning of 'human capital' as used in recent community resilience research. Instead, our definition is closer to that of sociologist Nan Lin, who described cultural capital as '[social] resources captured through social identification and reciprocal

[5] These averages were lower than the national average recorded for Vietnam of 5.8 for current experienced well-being or the global average of 5.4. However, it should be noted that researchers have found a strong correlation between income levels and levels of subjective well-being (Sacks, et al., 2010), with wealthy individuals reporting greater satisfaction with their lives.

recognition' (2001, p. 43), with identification in this case as being with a particular ethnic group, the Co-tu. Cultural capital may include values, rules and norms, but it can also encompass traditional knowledge and indigenous practices. According to Norris et al. (2008, p. 145), "any earnest attempt to explore resilience in a particular community will feature local culture and norms prominently." Although this category is not commonly included in resilience approaches, in this case the contribution of indigenous practices in improving housing conditions and community ties among the Co-tu merited special emphasis.

As mentioned previously, one of the most distinctive characteristics of a Co-tu village is its community house, or *guol*. National decree 181-2004-ND-CP allows for allocation of land for construction of a district government-approved "religious establishment" for resettled communities. This supported the district people's committee's decision to encourage the villagers to construct a traditional community house of thatch and wood shortly after they resettled in 2006. They received some funding from the district government as well as approval to procure logs from protected forests for the main beams. The community house was constructed with labor and materials provided by each household, with construction supervised by village elders. It is now mainly used for meetings by visiting officials or mass organizations but also serves as something of a community center and focal point for village gatherings, festivities like the Tet New Year's feast and casual activities. The villagers gather at the community house throughout the day, with young men playing football and other games at dusk in the adjacent open field and villagers taking shade in the well-ventilated building during hot summer afternoons. Community leaders ensure regular maintenance and periodic replacement of the thatched roof with labor from all households. However, several villagers indicated that due to a lack of funds, village rituals such as buffalo sacrifice festivals and Tet celebrations had been abandoned or minimized, with chickens or pigs substituting for cows or water buffalo and fewer festivals being held at harvest time or at other auspicious occasions.

While members of a January 2012 focus group claimed to be proud to be Co-tu, stating that Co-tu "have beautiful traditions with heroic history," individual interviews of villagers revealed some ambivalence towards their ethnic identity. When asked in March 2013 if they would choose to be born Co-tu or Kinh, nine of 17 respondents selected Kinh, with most explaining that this would enable them to access greater financial and educational attainments. Seven respondents chose Co-tu identity, stating that they were proud to be Co-tu, they were accustomed to their culture or they "have no choice but to be Co-tu." (One resident responded that either identity would suffice.)

Traditional beliefs and daily practices have undergone rapid change since resettlement, in part due to greater contact with non-Co-tu and exposure to television and other media. Respondents in March 2013 interviews said that young people behave more like the majority Kinh Vietnamese and often have little knowledge of Co-tu traditions. However, in other respects traditional views linger. Although there is increasing recognition of the importance of family planning and education, the villagers continue to marry younger and have more children on average than Kinh Vietnamese, with family size averaging 4.72. Men

continue to be the dominant decision-makers in the village, with no women in official positions besides head of the Women's Unions. Women rarely leave the village for visits to nearby towns or cities. Several residents voiced the fear that women who leave the village risk being captured and sent as wives to China or the widely accepted view that livestock die due to pathogens brought to the village by itinerant Kinh traders, reflecting the traditional Co-tu aversion to outsiders.

4.3 Operationalizing capitals to improve adaptation

The sustainable livelihoods framework developed by Scoones (1998) provides a context for understanding how the villagers operationalized the abovementioned capitals in order to improve living conditions and how they adopted livelihood strategies, influenced by laws and institutions, government, and policies.

4.3.1 Living conditions

Housing satisfaction and adaptation has not been extensively studied in DFDR research, but given that the bulk of resettlement funds here, as elsewhere, commonly goes to housing, and that interview respondents identified 'unsatisfactory housing' as their third greatest source of concern post-resettlement after food insecurity and lack of livelihoods, it can be regarded as an important indicator of overall community resilience. Although housing and living conditions are subsumed under the category of 'livelihoods' in Scoone's original SLA framework, the extent of housing adaptation and traditional building construction found in the villages and its contribution to overall wellbeing for both households and communities make it worthy of separate discussion here.

The A Vuong dam hydropower authority contracted with a local construction firm to erect concrete block homes on piles for resettlers, consisting of one room with an open area beneath, as well as adjacent detached 13-square-meter concrete block structures containing kitchen, bath and toilet chambers (see Figure 4.2). Villagers claimed that the 40-square-meter houses were poorly constructed and that the small kitchen provided poor ventilation for cooking fires. Several stated that the houses, with the living area sitting atop 1.85-meter-high pillars, were particularly dangerous for the elderly and young children. Most of the external wooden staircases were damaged in a 2008 storm, but few of the residents received compensation to cover repairs. In interviews, older residents professed a preference for traditional Co-tu-style homes of woven bamboo with thatched 'tortoise-shell' oval roofs as sites for cooking, sleeping and socializing (Matsuda 2012).

Villagers applied their indigenous construction skills to adapt and enhance their housing in several ways, including modifying the provided houses and constructing traditional and Kinh-style buildings (see Figure 1.18 in Chapter 1). More than half of the households in Aden converted the ground floor space into living space by erecting wooden siding or bamboo walls and laying down tile flooring. The majority also added new balconies and staircases or extended the roof to keep out the rain and wind. Adjacent to the received housing most villagers constructed bamboo "kitchen houses" on low piles, with one or more hearth for

cooking (see Figure 4.2). For housing materials most used wood retrieved from their previous homes or procured from the forest, often without permission from the commune.

Figure 4.2. Provided house and adaptations: From left, original construction, modified stairs and balcony, modification of ground floor, traditional family house

Several villagers constructed ground-level Kinh-style wooden houses within their compound after their sons married, with funds received from two government programs for vulnerable households and materials often procured from the forest. Some households had up to five structures crowding a compound of 400 square meters. Relatives and nearby neighbors, notably those from the same original villages, often lent their labor for house construction. The hosts repaid them with large meals, requiring purchase of a chicken or pig.

4.3.2 Livelihood strategies

The SLA framework identifies three main types of rural livelihood strategy options: agricultural intensification or extensification, livelihood diversification and migration (Scoones, 1998). Only one Cutchrun villager was reported to have migrated to a nearby town for employment but he returned to the village after a few months. Nine of 17 respondents in 2013 interviews indicated a willingness to migrate for employment, but the remoteness of large urban centers, lack of education, need to care for children or elderly parents, and few contacts outside the village were cited as principal factors impeding out-migration.

The most common strategies by village residents to overcome a reported decrease in food security due to poor soil productivity and declines in fisheries and wildlife were expansion of agricultural land by cultivating new plots, continuing to cultivate original plots near the dam site as well as the land received after resettlement, and diversification by adding new income sources and crop varieties. The Co-tu traditionally diversified their livelihoods by engaging in livestock husbandry, fishing and hunting as well as agriculture, but constrained access to rivers and the reservoir, reduced fisheries, restrictions on hunting large game and high post-resettlement livestock morbidity have limited traditional non-crop-based responses here. Instead, the residents have tried to expand sources of farm income and home consumption by building fishponds to practice aquaculture, planting fast-growing acacia trees, or cultivating novel cash crops like banana and pineapple, but with limited success, which they primarily ascribe to poor quality soil or, in the case of acacia, lack of available land.

4.4 Discussion

4.4.1 Livelihood outcomes and community resilience

Oliver-Smith (2006) wrote of the need to apply local knowledge to better predict resettlement outcomes and conceive more viable approaches. An examination of Co-tu village outcomes suggests that traditional practices and beliefs, or cultural capital, significantly influenced the reaction to resettlement, both fostering adaptation and limiting adaptive capacity. The Dong Giang district government was the main implementing agency for resettlement, and although the A Vuong dam was the first dam-induced resettlement for the district, local officials could draw on examples from nearby dam sites and experience in administering Co-tu villages in an area where the population is 71% ethnic Co-tu (Hung, 2007). The most significant decision was to resettle villages intact, when possible. As mentioned, Aden and adjacent Tro Gung had existed near each other before resettlement, so both internal and inter-village relations were well-established. Residents from the smaller village of Ta Reng were incorporated into two other villages post-resettlement, but the 98 former Ta Reng residents now living in Aden were settled separately on the east side of the village. House sites within the Aden and Ta Reng compounds were determined randomly by lottery, but families were allowed to adjust locations by negotiating with neighbors to allow relatives to live in close proximity. Retaining the original Co-tu village names also helped to foster a sense of continuity and cohesion.

Although villagers noted that households with members engaged in manual labor garner additional income, the fact that nearly all of the villagers are identified as poor or near poor suggests limited income inequality. Ahern and Galea (2006) found that poor individuals tended to suffer from a higher level of post-disaster depression if they were from a neighborhood characterized by high income inequality. In the case of Cutchrun, this would argue for the maintenance of greater social cohesion. Residents possess strong bonding social capital within the village and equitable access to extremely limited village resources but have weak bridging social capital to provide access to resources, prestige and livelihood opportunities outside the village.

Construction of the community house helped to foster strong community ties and ethnic identity. Maintaining the elected post of village elder implies local government recognition of the important advisory role played by Co-tu village elders.

The provision by the hydropower authority of poorly constructed houses that residents described as cramped, uncomfortable and alien to traditional housing styles had direct economic and environmental consequences, as residents felt compelled to expend money and effort and log forest wood in order to repair broken stairs and toilets, convert the first floor to living quarters, and build supplemental structures on adjacent land. In addition, by using scarce land for building construction they were forced to forgo revenue or food security that could accrue from homegarden cultivation.

4.4.2 Policy implications for resettlement practices

Resettlement policy and research understandably have tended to prioritize consideration of compensation and economic factors for preventing impoverishment and securing sustainable livelihoods. Household income and assets are quantifiable, ubiquitous indicators for gauging successful outcomes. Yet purely economic approaches may miss crucial factors like community links and cultural or religious influences on daily life. Resettlement planners, seeking maximum efficiency and wide applicability, often disregard the complex cultural and social conditions that prevail in pre-resettlement communities (Koenig, 2006).

Scudder analyzed 44 cases of dam-induced displacement in order to test the accuracy of five of Cernea's IRR model risks (landlessness, joblessness, food security, marginality and access to common property) in predicting impoverishment. The risk most highly associated with an adverse outcome, he found, was marginalization, which he defined as the loss of economic power, often accompanied by social and psychological marginalization. A related risk, social disarticulation, was impoverishing in 34% of the cases. In most of these cases, he noted, resettlers were unable to move as a unit. As noted by Downing (2009), disruption of pre-existing spatial or temporal orders through displacement may cause uneasy residents to feel that life has become chaotic and unpredictable.

In his 2003 critique of the compensation principle (the theory that compensation for lost assets is sufficient to restore displaced populations to previous levels of functioning), Cernea noted that "displacements instill loss of confidence in self and in society and render much capital obsolete. Cultural effects, combined with the seizure of assets accumulated through prior generations' labor, result in the near killing of enterprise and entrepreneurship. Discouragement strikes deeply at the human ability for recovery. These cultural and psychological pains and losses – whose lethal combination has been revealed through perceptive sociological research – inflict in turn long-term harm to resettlers" (2003, p. 40).

In writing about the "psycho-socio-cultural (PSC) impoverishment inflicted by involuntary displacement" (2009, p. 225), Downing and Garcia-Downing posit a transition during displacement from "routine culture" to the appearance of a "dissonant culture" while displaced persons are trying to adjust to the upheaval of dramatic change, and then the emergence of a new routine culture, where informal and formal linkages are re-established and new socio-cultural articulations become the norm (ibid., p. 235).

Community resilience in Cutchrun could have been enhanced had residents been allowed to build their own housing, as acknowledged by two local government officials. In addition, although the compact village layout may promote cohesion and good behavior, the practice of constructing detached homes for newlywed sons, encouraged by stipends awarded by national poverty alleviation programs, implies that the already cramped village space will soon reach its limit.

Agricultural land is similarly constrained: due to the poor productivity of upland plots, villagers have been converting protected forest land for upland rice cultivation. Although illegal, the government recognizes the villagers' need to improve food security and has mainly turned a blind eye to the practice. The district government could improve food security by allowing the villagers access to draw-down areas of the A Vuong reservoir for fishing and paddy cultivation, which they currently prohibit, citing concerns about water pollution. Providing financial support for traditional rituals such as buffalo sacrifice at harvest time would foster greater ethnic pride and community cohesion.

This paper in no way seeks to rationalize resettlement practice or to argue for abrogating the ethical obligation to avoid or minimize involuntary resettlement when possible. However, infrastructure construction is now estimated to displace 20-25 million people per year throughout the developing world (Cernea, 2013), lending urgency to the need to improve resettlement policies and measures. Generous cash and land-based compensation, while essential, does not alone ensure successful outcomes. In reference to Cernea's IRR model, Koenig wrote that "both social disarticulation and marginalization can be mitigated by resettlement strategies that emphasize the reconstruction of communities and social networks and deliberately pursue strategies of social cohesion" (2006, p. 108). In an examination of a Greek urban community Hirschon (2000) noted that cultural practices and values played a crucial role in helping resettled urban dwellers adjust to new living conditions.

Appraisals of poorly educated upland rural agriculturalists as lacking "adaptive capacity" ignore the flexibility that marks life in a highly varied environment. As Chambers noted about upland regions, "Many sorts of plants, animals and people coexist and interact in a flux of change. Activities are diverse, complex, irregular, adaptive, and harder to measure. The people of the hills improvise and assure their livelihoods in many ways. They are versatile generalists with varied skills, and have many perspectives" (1997, p. 191).

It can be argued that certain indigenous Co-tu practices and beliefs may constrain post-resettlement adaptation. A patriarchal tradition, with women largely excluded from decision-making or positions of authority, has limited the roles that women may play, while the traditional reluctance to leave safe village environs, dating from earlier periods of inter-village conflict, may limit adoption of migration or other livelihood strategies. Cultural norms can also affect the ability of residents to improve incomes, if they disfavor direct marketing of one's crops, charging interest on personal loans, or growing income inequality by differential participation in training schemes (World Bank, 2006). Nevertheless, there are many positive contributions to community resilience of indigenous knowledge (defined by Agrawal (1995, p. 413) as "local knowledge and technology"). Table 1 in Appendix C presents a more extensive analysis of positive implications and inferred limitations of indigenous practices and beliefs.

In the face of a persistent and widening gap in average income between ethnic minorities and the majority Kinh, poverty alleviation has long been privileged over conservation of indigenous skills and knowledge as the government's primary ethnic minority policy objective. Government policy promoting Vietnamization of ethnic minorities has regarded expensive funerary customs and other indigenous practices and beliefs as a handicap to upward mobility at best, 'backward' and a threat to national unity at worst (Baulch, et. al., 2007). Such dismissive attitudes, combined with the loss of agency for ethnic resettlers accruing from both displacement and top-down local governance, underline the need to reappraise indigenous traditions.

As suggested by anthropologists and practitioners (see Scudder, 2005; Koenig, 2006), resettlement authorities can address many of these concerns by incorporating the following socio-cultural considerations in project planning:

1. Move communities intact, preferably retaining the original name, general spatial layout and other characteristics.
2. Relocate communities in sites as close as possible to previously accessed rivers and common natural resources as well as non-inundated cultivated land.
3. Respect cultural traditions by assisting in moving or protecting burial grounds and supporting construction of village shrines and temples, community houses and other buildings with spiritual or social significance to local residents.
4. Incorporate understanding of traditional land use practices and respect for and preservation of sacred sites in forests and landscape in official land-use planning.
5. Provide administrative and/or financial support for the maintenance of traditional community rituals, practices and events that will foster continued unity and wellbeing, and for formal instruction of youths in indigenous arts and language.
6. Allow a high level of community self-administration, respecting local traditions of community leadership. This implies a high degree of participation in resettlement decision-making by community residents.

In the case of Vietnam, prospects for communities to achieve marginally greater participation in resettlement decisions seem to be improving with passage of a 2007 ordinance linked to the 1998 grassroots democratisation law (Order No. 06/2007/L-CTN) that specifies that compensation and resettlement schemes should be subject to village-level votes, but as yet there have been few attempts to integrate the internationally recognized principle of free, prior and informed consent (FPIC) in resettlement planning.

4.5. Summary

This research applied a community resilience framework combined with a sustainable livelihood approach to identify the innate forms of capital that resettled ethnic minority residents could instrumentalize to

recover from the shock of displacement and resettlement due to construction of a hydropower dam in Quang Nam province, central Vietnam.

Research question 2 (see Chapter 2.2) asks how DPs can act autonomously to adopt adaptive livelihood strategies and achieve sustainable outcomes for improved community resilience. Weak capacity in human and financial capital, particularly in education, status and non-farm-based skills, and degraded natural capital has constrained residents' ability to implement successful livelihood strategies such as migration or diversification. However, social and cultural capital, particularly the ability of the community to remain spatially intact, individual skills in adapting received housing and constructing traditional structures, and indigenous practices such as community house construction and consultation with elders can be seen to have contributed to community resilience.

While a critical need exists for external assistance by government, the hydropower authority, and other agencies for rehabilitation after displacement, displaced populations must also draw upon their own resources and livelihood strategies. Understanding the extent of these innate resources and the capacity for resilience will allow external assistance to be applied more effectively, while fostering greater autonomy and confidence among the displaced.

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CHAPTER 5. IMPROVING ENVIRONMENTAL, ECONOMIC AND SOCIAL SUSTAINABILITY OF THE RESERVOIR BASIN

This chapter addresses the problem of DFDR within the context of integrated lake basin management (ILBM) of dam reservoirs. Dam-forced displacement and resettlement can pose severe challenges to the environmental, economic and social sustainability of a reservoir basin. As suggested by a case study in Quang Nam province, in response to the lack of adequate replacement land, declines in supplemental food sources and reduced access to natural resources, resettled residents may destroy lake catchment forests for farmland conversion or engage in illegal logging; increase agrichemical inputs on reduced land, thereby polluting runoff and groundwater; and place increased pressure on fisheries and wildlife. The author provides examples to illustrate the need for applying approaches that make affected people beneficiaries of dam projects and include civil society organizations in resettlement planning. These approaches can be supported by an inclusive reservoir management board working to achieve environmental sustainability, economic growth and social equity.

5.1 Overview

Much has been written on the adverse environmental impacts of dam construction on river basins, including reduced sediment flow, loss of fisheries, eroded riverbeds and altered downstream flows (see Fearnside, 2001; Bunn & Arthington, 2002; and Kuenzer et al., 2012). Artificial reservoirs created by dam impoundment have also raised environmental concerns regarding the loss of aquatic species, sedimentation, salinity, emission of greenhouse gases and adverse impacts on impounded terrestrial ecosystems (World Commission on Dams, 2000; MOIT, 2009). However, environmental impacts on lake and river basins from anthropogenic causes cannot be effectively remediated without taking into account the needs and contingencies of those living in the reservoir basin area and in downriver communities affected by water quality and flow regulation. This includes an accurate assessment of indirect environmental risks from the resettlement of populations displaced by dam construction (Tan & Yao, 2006), as well as an understanding of the socioeconomic implications of dam-forced displacement and resettlement.

Dam-forced resettlement can profoundly affect the physical and socioeconomic environment of a river basin, as shown in Figure 5.1. Development of roads, homes, agricultural plots and other new infrastructure for resettlers may fragment or degrade ecosystems, while spurring additional in-migration from outside the area. Improved road access to remote areas often leads to increases in illegal logging and resource use. Conflicts with host communities may result from ethnic or religious differences or competition for employment (Koenig, 2006). Competition with other residents may

also arise for agricultural land and common pool natural resources, causing resettlers to cut or burn nearby forest land for agricultural conversion and leading to depletion of local fisheries and wildlife (MOIT, 2009). The resulting erosion and deforestation may adversely affect water flow and quality for drinking, irrigation and hydropower generation. Tan and Yao (2006) identified six major types of environmental consequences of dam-induced resettlement: increased pressure on the carrying capacity of surrounding land, loss of vegetation and soil erosion from land reclamation, pollution from industrial and commercial activity, environmental degradation due to urban relocation, landslides near reservoirs, and social impacts of displacement. These impacts may be direct or indirect: examples of the latter type include degradation due to population pressures from in-migration after roads and other infrastructure have been constructed, or development of commercial fisheries or resort facilities at the reservoir site that reduce lake quality and biodiversity and increase waste (Oliver-Smith, 2010).

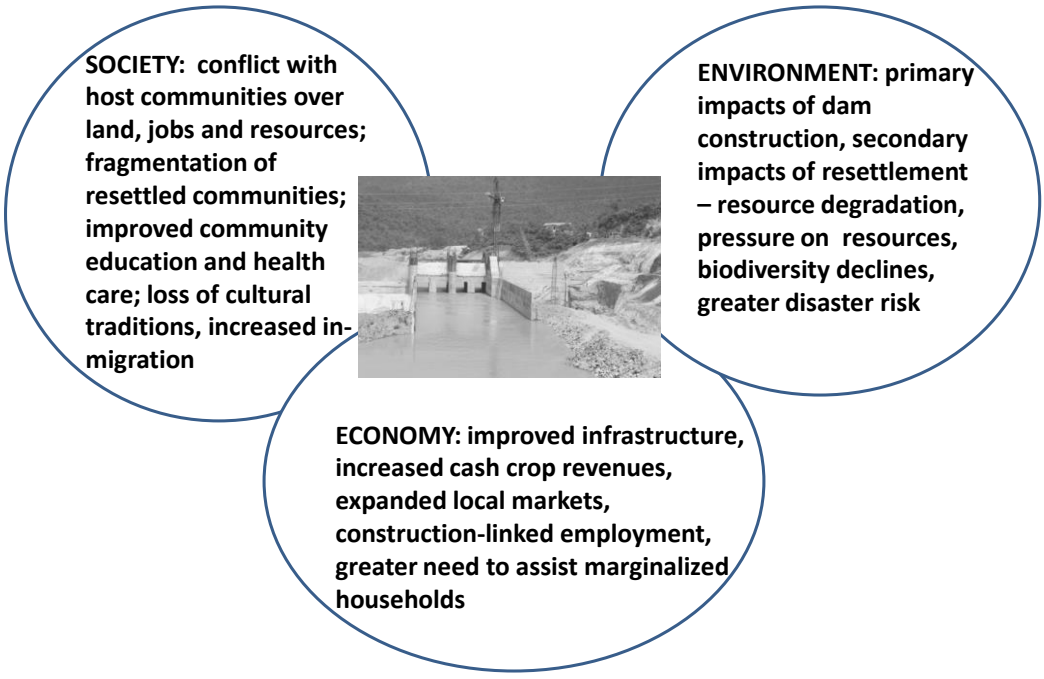

Fig. 5.1. River basin impacts of dam-forced resettlement

This chapter will examine some of the environmental, economic and social implications of DFDR for reservoir and river basins, and will then discuss the steps that can be taken by varied stakeholders to improve resettlement outcomes based on an integrated lake basin management approach.

5.2 Dam construction and displacement in Vietnam

Johnston (2012, p. 305) has written that "hydrodevelopment – in the enclosure and destruction of the world's riverine ecosystems commons – may be one of the most significant factors driving global poverty rates." In Vietnam, the human and environmental costs of large hydropower dam projects have become the focus of growing media attention. In recent years Vietnam has experienced widespread declines in river water quality that have been linked to dam construction; low flow during the dry season, causing rivers to run dry (as with the Dak Mi 4 dam in Quang Nam province, 2013) and urban areas to experience electricity brownouts; and degraded fisheries, forests and biodiversity. In 2010, due to prolonged drought, reservoir levels and hydropower generation dropped sharply from levels of previous years, leading to concern over its long-term reliability（CSRD, 2013). There have been several widely reported dam-related scandals and accidents, including cracked walls and water leakage due to shoddy construction, sudden storm-water releases from the Yali Falls dam in September 2005 that inundated downstream areas and communities (Hirsch, 2006), and destructive tremors caused by water pressure in a reservoir situated over a previously unidentified fault lines at the Song Tranh 2 dam (Viet Nam News, 2013). In addition, as was reported in a government-initiated strategic environmental assessment report on hydropower development in Vietnam, "One key problem with existing practices is that each hydropower scheme is managed in isolation without taking into account the cumulative impacts of multiple schemes within river basins" (MOIT, 2009), referring to recurrent problems such as unpredictable fluctuations in river flow. In May 2013 the government cancelled previously approved plans to construct 338 hydropower dams due to environmental risks, and scrubbed an additional 67 hydropower projects by August 2013 (Nguyen, 2013).

5.3 Case study of dam-forced displacement

The example of a hydropower dam in central Vietnam illustrates some of the difficulties attending dam-forced resettlement. Members of seven ethnic minority villages were resettled due to construction of the A Vuong 210MW hydropower dam in Ma Cooih commune, Dong Giang district, Quang Nam Province in central Vietnam (see Figure 2). The dam was completed in 2006, and residents living beside the A Vuong river, a tributary of the Vu Gia river, were resettled in the same year to three different locations. As no data was available for farm harvests and other sources of livelihood prior to resettlement the author relied on farmers' subjective assessments of changes in living conditions and livelihoods.

In focus group discussions residents identified as their greatest current problems, in order of response frequency, as land quality and quantity, lack of water for irrigation and household use,

difficulty in accessing natural resources and poor housing stock. They reported that due to poor soil quality in their new plots it took an average of two years to harvest cassava, compared to one year before the move. Due to poor irrigation paddy rice harvests are only sufficient to feed a four-member family an average of three months per year.

Local forest cover has declined in the area since resettlement due to infrastructure development, illegal logging and conversion for agricultural use, typically by clearing and burning of foliage by villagers who were unable to produce enough crops to secure food security with the land they had received after the move. According to a middle-aged woman in a January 2012 focus group: "The forest was better before [resettlement] so we could cut down large trees for building houses. There was lots of timber and wildlife as well, so we didn't worry when we moved from one site to another. Illegal logging has destroyed much of the forest so we can't rely on the forest anymore."

A survey of the A Vuong dam project area totaling 81,000 hectares examined forest loss over a ten-year period. As shown in Table 5.1, they found that total forest cover, including both natural and plantation forest, declined from 64.63 percent in 2003, at the start of the dam project, to 57.16% in 2013. Natural forest declined from 60.68 percent to 53.5 percent over the same period (Quang Nam, 2013). In 2008, after resettlement, a large decline in vacant land was recorded (23,604 to 14,145 hectares), reflecting the unsanctioned conversion of forest land for agriculture by the villagers.

Table 5.1. Forest cover in the A Vuong hydropower dam area

Year	Area (ha)	Natural forest	Plantation forest	Vacant (degraded) land	Other land (incl. cultivated upland area)	Forest coverage (%)
2003	81,129	49,231	3,200	23,868	4,830	65
2004	81,129	49,231	3,200	23,868	4,830	65
2005	81,129	49,228	3,200	23,871	4,830	65
2006	81,129	49,214	3,228	23,673	5,014	65
2007	81,129	49,220	3,249	23,604	5,055	65
2008	81,129	48,387	3,635	14,145	14,963	64
2009	81,129	48,387	3,870	13,978	14,894	64
2010	81,263	40,875	4,496	20,912	14,980	56
2011	81,263	40,875	4,544	20,895	14,950	53
2012	81,263	40,875	5,297	20,278	14,814	56
2013	81,263	43,472	6,436	19,608	11,748	57

Source: Department of Natural Resources, Quang Nam Province, 2014

In focus groups and household interviews residents reported reduced access to fisheries and forest wildlife, two important food sources before resettlement (MONRE, 2008). An environmental impact assessment conducted before the dam was completed (Electricity of Vietnam, 2004) found 21 species of fish in the A Vuong river, including two endangered species recorded in the Red Book of Vietnam, *Anguilla marmorata*, a type of eel, and a snake-head species, *Channa striata*. According to semiannual environmental monitoring reports commissioned by the provincial government, the biodiversity and quantity of fish in the A Vuong reservoir is low, with only 20 total aquatic species recorded and one type of zoobenthos averaging 20 per square meter. Although most households reportedly harvested river fish before the move, only three of 120 households in two villages surveyed in 2012 reported that they regularly caught fish for family consumption; the others either purchased fish or no longer ate it, in part because the resettled villages were far from the A Vuong river. Some villagers reported that they travelled far downriver to catch fish only for weddings or special events. In addition, the A Vuong river now nearly runs dry during the summer, further reducing fish populations (see figure 5.2). The district government has denied the villagers access to the dam reservoir for fishing or aquaculture, citing concerns about water pollution. The percentage of households who regularly engaged in hunting also declined, from 16% before resettlement to 7.6% in 2012. One farmer noted a lack of forest wildlife available for trapping in a March 2012 focus group interview, while others stated that their catch was mainly rodents and other small animals. Hunting has also been complicated by strict government laws forbidding catches of large animals, especially in light of severe recent declines in terrestrial biodiversity (SEA, 2008).

Figure 5.2 Downstream from the dam during dry season

5.4 Responses to displacement

As noted above, the Cutchrun residents were no longer able to depend on natural resources and agriculture practiced on their compensated land to ensure food security and improve living conditions after resettlement. They responded to their reduced livelihood prospects by attempting to diversify and intensify crop production and enlarge the size of cultivated land, but few of these efforts have been successful, and some have had deleterious environmental impacts. For example,

although the local government has officially forbidden shifting cultivation most families have cleared new fields at a discrete distance of five or more kilometers from the village by burning or cutting protected forest land, doubling average upland cultivation holdings to an average of 1-2 hectares. This has increased deforestation in an area already suffering from declining forest cover. To cope with poor paddy rice harvests, farmers have increased fertilizer inputs, with 150-200 kilograms of three-component NPK fertilizer applied for each 500m^2 plot, thus adding to their expenses.

Projects and training courses funded or implemented by international non-governmental organizations (INGOs) and district agricultural extension specialists have also shown poor results. Farmers were trained in cultivation and received seedlings for growing cash crops such as pineapple and bananas in a project administered by the INGO World Vision, and most households participated in the schemes, but in 2012 focus groups farmers explained that the pineapples produced have decreased in size each year, and banana production is declining due to inappropriate local soil conditions. Farmers also received pigs and cows in the latter part of an Asian Development Bank-sponsored pilot benefit-sharing project from 2007-2011, but they reported that most of the livestock had died. As part of a 2006-2009 World Vision project nearly half of the residents of Aden constructed family-run fish ponds, receiving support from agricultural extension specialists. However, few of the fishponds proved to be sustainable, and most were eventually discontinued. According to the district People's Council head (2013), the fish that is raised is mainly for household consumption due to the difficulty of securing distribution channels for this remote village.

A few non-farm endeavors have shown more promise. According to the headman of Aden (2012), 25 Aden households have planted acacia trees with their own funds, spending approximately two million VND per hectare, and both villages have received land from the local government for communal acacia plantations. The revenues from harvested communal timber can be used to fund village Tet celebrations and other village activities. A few people engage in small-scale marketing of processed food and daily goods, some have invested in a machine that can husk rice for other farmers, and a few elderly residents continue to practice traditional skills such as basket-weaving to gain income or trade for goods. More young men than before displacement depend on seasonal manual labor for additional income, mainly working on construction of roads and hydropower dams or for assisting acacia harvesting. In addition, the Aden village head estimated that 20% of local residents engage in illegal logging, cutting and transporting timber under contract from outside companies or individuals (personal communication, 2012).

Although income inequality remains low, a few, mainly young, individuals have prospered with entrepreneurial activities. A 35-year-old man in Aden, despite having only three months of formal

education, was identified by other villagers as the wealthiest resident, mainly from his main business of producing 15 liters of rice wine per week for purchase by other villagers and feeding the rice husks to pigs, which are sold to Kinh traders for average net profits of 1.5 million VND per pig. Although the man joined training courses in swine husbandry offered by the district, he stated that he learned successful husbandry techniques by observing a Kinh farmer living in the village. The man also frequently engages in manual labor, grows acacia, runs a small shop from his home, operates a fishpond, hunts wildlife and grows crops for family consumption, investing almost all of his proceeds in his rice wine business. Other residents were asked their thoughts on emulating the young man's success. Said one middle-aged woman, "His business is too risky for us to try but he can succeed because he has skills for farming and raising pigs given by the gods, not by experience." Two other women noted that there is no local demand for additional rice wine ventures, while the headman stated that the young man was not afraid to take out extensive bank loans to finance his operations but he would not take on such risk.

Urban migration is an increasingly common livelihood strategy for young rural Vietnamese, but none of the villagers has reportedly migrated for employment, although three youths from the two villages are now attending university in Danang or the provincial capital in Tam Ky on ethnic minority scholarships. A small sample of 17 individuals were asked if they would consider labor migration in the future. Although eight respondents said they would migrate if a job was available, the others responded that they couldn't leave due to old age or childcare or family responsibilities (three respondents), or they lacked qualifications or confidence (five respondents). One man said only that he hoped that his children could migrate to secure a better life.

During village visits in 2012 and 2013 the residents expressed great optimism that living conditions would improve with the planned 2014 inception of a benefit-sharing program, payments for forest environmental services. This nationwide program, backed by a 2010 law on benefit-sharing (99/2010/ND-CP Law on Payment for Environmental Services), compels hydropower, irrigation and ecotourism providers to pay taxes that are channeled to local governments and households in resettled villages. The resettlers earn regular monthly income for monitoring illegal logging and maintain forest in reservoir catchment areas. They also receive forest land use rights so that they can plant acacia and other productive trees on forest land. The residents were trained by an INGO in forest maintenance and learned about forest ecosystem services, and they were promised continuing income of some 500,000 VND per household per month, a 40 per cent increase from their current average household income. However, as of March 2014 the villagers had not yet received regular payments under the program, and their economic status had undergone little change.

Despite the initiatives described above, more than 90 per cent of the residents remain below the poverty line. For the residents, the largest single source of income is monthly government remittances, including pensions, veteran stipends or disability payments. Said the headman of Aden (2012): "There are many policies for poverty reduction, but only families who receive money from the government can change their situation by receiving pensions or other money."

According to an ADB benefit-sharing project report (2007), household income of residents prior to resettlement in 2006 ranged from 10-15 million VND per year. The average household income as reported in the 2012 household survey was 732,671 VND per month, or 8.79 million per year. With the new PFES program residents are supposed to receive 502,333, or an additional 6,028,000 per year, 40% more than before. However, this still leaves the majority far below the rural poverty line of 400,000 VND per capita per month. In 2012, according to the headman of Aden, 69 of 75 households (92 per cent) were characterized as "poor," while the remaining eight per cent were "near poor," with annual household income of 400,001 to 520,000 VND. The situation was similar in Tro Gung, with 47 of 50 households regarded as "poor" and the remaining three as "near poor." For Aden the percentage of poor was three percentage points higher than in 2010, suggesting that prior living conditions have not been restored, unless the contribution of the PFES program is considered (see Table 5.2 below).

Table 5.2. Estimated pre- and post-resettlement average household income, Cutchrun

	Year	HH income	Source
1	2005	10-12 million VND	ADB report (2007)
2	2012	8.79 million VND	HH survey (2012)
3	2014	14.8 million VND	Est. with PFES income

5.5 From DPs to beneficiaries: Benefit-sharing mechanisms

Since dams are often built in relatively impoverished, less populated upland regions by outside investors, both electricity supplies and revenues commonly accrue to distant urban and industrial centers, leaving few benefits for local residents. According to the World Commission on Dams, "People adversely affected by a dam project should be the first to benefit from the project. Appropriate mechanisms should be introduced to ensure equitable distribution of development opportunities generated by the dam" (2000, p. 243). These benefits and opportunities may include compensation, infrastructure, and employment in dam construction or maintenance positions, but these may be one-time or short-term in nature. In recent years a number of other benefit-sharing mechanisms have been implemented for dam-displaced residents, including community-wide electrification, irrigation and electricity, often at preferential rates; non-monetary benefits, such as

allowing resettled residents to access reservoir fisheries and practice aquaculture or cultivate drawdown areas of the reservoir; and revenue sharing, including endowing community development funds managed with participation by residents (Haas, 2009). In one revenue sharing scheme in Japan, for example, farmers were paid rent for the term of hydropower generation for land that had been inundated by dam construction (Nakayama & Furuyashiki, 2009). In an Asian Development Bank-funded pilot project initiated in 2006 in the abovementioned A Vuong research area in Vietnam resettled residents were included in a series of workshops that sought to identify their preferences in using hydropower tax revenues. They selected livestock and agricultural training, rural credit schemes, aquaculture and reservoir fisheries and subsidized electric provision for poor households (Haas, 2009). However, as Mokorosi and van der Zaag (2007) noted in an analysis of two dam projects in southern Africa, although benefit sharing is often upheld as an ideal, in reality affected people tend to enjoy mainly indirect benefits like community services or livelihood assistance and the most vulnerable, such as farm workers, benefit less than owners of farm land, who receive cash or land-for-land compensation. They suggest that national benefit-sharing policies be adopted, the right to participate be enshrined in legislation and an inclusive implementation strategy be enacted.

The hydropower authority, as the major beneficiary of hydropower generation revenues and the environmental regulating services of healthy watershed forests, can be said to bear an ethical responsibility for sharing its revenues with the impacted communities that have suffered for "the greater good" (De Wet, 2006). Based on the "user pays" principle, the Vietnamese government is now creating a legal framework for nationwide implementation of a benefit-sharing mechanism called payment for environmental services (PES) that taxes providers of hydropower, irrigation and ecotourism. A PES scheme has been defined as "a voluntary transaction in which a well-defined environmental service (ES), or a form of land use likely to secure that service, is bought by at least one ES buyer from a minimum of one ES provider if and only if the provider continues to supply that service" (Wunder, 2005). PES schemes not only provide ES providers with steady streams of income, but they provide clear incentives for them to conserve common-pool resources such as forests and rivers. Previous schemes in Latin America and elsewhere included public sector schemes, private market schemes and direct private deals between seller and buyer (Wunder 2008). In this case, however the PES scheme is government-mandated and participation is involuntary.

5.6 Civil society organizations: Negotiating for residents

In many countries civil society organizations have played major roles in improving resettlement outcomes. The groups include international and domestic non-governmental organizations (NGOs), community-based groups, faith-based groups, labor unions, and research centers. International development NGOs often provide assistance in health, nutrition and agricultural support for

resettlement communities as part of larger national programs. Domestic NGOs can help improve post-resettlement living conditions and represent residents with government and project management in many developing countries. In the Narmada river basin of central India, for example, NGOs have supported livelihood training and helped to improve infrastructure in resettlement villages, despite having actively protested construction of the dams that had caused the initial displacement (Pandya, 2013). In India NGO expertise is commonly requested and their involvement in resettlement is funded as a way of supplementing limited local government capacities. In Cambodia, where CSO-government relations are often contentious, human rights and development NGO representatives support civil resistance and advocate for displaced residents to government and international bodies like the United Nations (Mgbako *et al.*, 2010). In Indonesia, CSO representatives have worked with the government to enable resettled farmers to access reservoir capture fisheries, engage in aquaculture and cultivate reservoir drawdown areas (Munro, Iskander & Costa-Pierce 1990).

NGOs have recently played strengthened advocacy and livelihood support roles in several Vietnamese resettlement villages. In Hu Ta district in Thua Thien Hue province, for example, a local NGO surveyed protected forest land near the villages to identify 169.2 hectares of unutilized land. They negotiated with the district to reallocate the land to resettled households in eight villages for plantation of indigenous bamboo and other trees.

All land is owned by the state in Vietnam, with residents, communities or corporations accorded land use rights for a specified number of years (Kolinjivadai & Sunderland, 2012). Forest cover is currently 44.5%, and thanks to government-backed afforestation efforts forest cover has increased by an average of 2.4 percent in the years between 1990 and 2010 (FAO, 2009). Despite these efforts, however, the amount of forest area per capita was only 0.15 ha in 2006, as compared to the global average of 0.97 ha, so forest use and access is highly contested throughout the nation. Forest is divided into three categories: special use forest, including national parks, reserves and protected areas, accounting for 17.1% of the total; protection forests (40.9%); and production forest (42%) (FAO, 2009). Recent Vietnamese legislation provides for the reallocation of unused state forest enterprise land to poor and landless rural households in order to decrease deforestation and increase household income, but so far local officials have been reluctant to allow devolution of land title to the rural poor (McElwee, 2009). In Hu Ta district, though, due to NGO intervention, residents were provided land and land use certificates and were trained in workshops on land law and land use rights. The certificates were used as collateral for low-interest bank loans for saplings, fertilizer and preparation of land for cultivation, as well as for household expenditures. Local officials were also trained in land use planning, land allocation processes and licensing of forest land use rights.

5.7 Discussion

To achieve the goals of environmental sustainability, economic growth and social equity embodied in integrated management of a lake basin where dam-displaced residents have been resettled, some efforts should be made to share the benefits of hydropower dam construction in an equitable way. This may involve a formal mechanism, such as the PES scheme mentioned earlier, or bestowing permission for using the reservoir for income-earning activities such as fishing, aquaculture or agriculture. It may also involve using a heretofore single-purpose hydropower dam reservoir for irrigation or flood control for downstream residents, and including residents' representatives, NGOs or local community organizations in lake basin management. However, the latter has proven problematic in Vietnam. Management of a hydropower dam reservoir in Vietnam is generally the responsibility of the hydropower authority, with priority given to financial considerations (IWMI, 2011). By law the provincial government plays an advisory role, particularly through its local forest management protection unit, part of the province's Department of Agriculture and Rural Development, and national agencies such as the Ministry of Natural Resources (MONRE) and Ministry of Industry and Trade (MOIT) must approve operational decisions. As Thanh (2013) has noted, overlaps in ministerial oversight and responsibility for water resources in Vietnam make integrated approaches in managing river or lake basins very difficult. For example, although MONRE is tasked with managing water resources overall, water for industrial activities is overseen by MOIT, water for domestic use by the Ministry of Construction, and water for agriculture by the Ministry of Agriculture and Rural Development (MARD).

Another common problem in Vietnam is the gap between policy and practice. For example, although when conceiving a national power development plan the government and EVN formally endorsed use of hydropower dam reservoirs for multiple purposes, including recreation, fishing, tourism, drought alleviation and local irrigation (MONRE, 2008), most reservoirs are solely used for power production. In addition, although the hydropower authority has been assigned overall reservoir responsibility the district government may allow local residents to access the reservoir without consulting with the hydropower authority (IWMI, 2011). The authority's actual enforcement area may be limited to the hydropower facility and immediate surroundings.

Dam and other infrastructure projects in Vietnam are governed by laws on land acquisition and resettlement offering incrementally improved and detailed terms of compensation but there remains a lack of transparency of resettlement processes and residents are unable to provide prior, free and informed consent to resettlement decisions (Singer and Hai, 2013-14). As with many infrastructure projects in the developing world, residents suffer from asymmetric access to project information,

weak financial clout and inadequate representation in implementation bodies, although they may passively participate in pre-resettlement meetings with local government and investors.

Improvement of outcomes for resettled residents clearly depends on a range of factors, from fair compensation and quality housing to provision of suitable land and livelihood support. However, approaches linked to reservoir management could help to address some of the problems identified here. In particular, the following steps could be taken in a Vietnamese integrated lake basin management (ILBM) approach that includes six pillars of governance:

1. Institutions: Reduce overlap in authority and poor cooperation between institutions involved in reservoir access and management by establishing a single management board with clearly denoted responsibilities and command.
2. Policies: Formulate or support local benefit-sharing initiatives such as reservoir access, electrification, agricultural and livelihood support, and payments for environmental services.
3. Participation: Include village heads, representatives of locally active NGOs and mass organizations like the Farmers' Union, district and commune officials as well as the hydropower authority in a broad-based management board. This would improve articulation of residents' concerns and would also enhance local representatives' understanding of the importance of ecological conservation of the watershed.
4. Technology: Assistance in improving irrigation, water supplies and poor sanitation for resettled residents could be provided by organizations or experts linked to the reservoir management board.
5. Information: Estimate potential water demand and water resource potential of the lake basin to determine available resources for sharing with residents. Monitor water quality, fisheries and biodiversity of the watershed to assess the impact of dam operations and local activities and establish a database for broader information-sharing (Thanh, 2013).
6. Financing: Funds from hydropower generation can be shared with local residents in a PES scheme and used for other benefit-sharing approaches. Allocation of funds should be based on the needs of local residents and ecosystem health as well as the interests of hydropower investors in a long-term approach.

5.8 Summary

The displacement and resettlement of residents for construction of a dam poses a number of challenges to achieving the ideals of integrated water resources management, namely "the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the

sustainability of vital ecosystems" (Rahaman and Varis, 2005, p. 15). Not only have most displaced residents been unable to restore or improve their living standards, they have often contributed to environmental degradation by conversion of forest land for agricultural production, polluting groundwater or engaging in illegal logging.

As case studies in central Vietnam have shown, local government and the dam project authority alone have been unable to achieve successful resettlement outcomes to date, suggesting that participation by a broad array of actors could help address the common resettlement issues of insufficient productive land and poor local governance and provide support for resettled residents long after formal assistance linked to a dam project term has ceased. In response to research question 3 asking how benefits from hydropower projects can be shared with DPs (see Chapter 2.2), it's clear that hydropower authorities and lake basin management can participate in implementing a number of benefit-sharing mechanisms, such as electrification of affected communities, providing access to reservoir fisheries, and PES schemes, like the approach that is currently being implemented in Vietnam, to share benefits of hydropower generation and irrigation supplies with resettled residents while supporting protection of ecological services, improving conservation of forests and extending the productive life of the reservoir. Civil society organizations can advocate for residents and promote land reallocation or access to reservoir fisheries and cultivation of drawdown areas through negotiations with local government officials. Reservoir management committees can include representatives from district, commune and village government, NGOs, and mass organizations like the Farmers' Union from the planning stage. An approach that incorporates multiple stakeholders in planning hydropower dams and the resulting resettlement will benefit ecosystem health and resident well-being alike.

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CHAPTER 6. BROADENING STAKEHOLDER PARTICIPATION TO IMPROVE OUTCOMES

This chapter critically examines three recent initiatives in Vietnam that promise to promote more stable livelihoods for displaced populations and to strengthen participation in development for residents as well as civil society. The first is a payment for environmental services (PES) scheme for hydroelectric revenue-sharing to fund forest maintenance and monitoring by displaced households, while the second focus is an international financial institution (IFI)-initiated project that prioritizes gender empowerment and participation. The PES scheme promises a sustainable income stream for displaced households and has institutionalized legal and government backing, but it requires high transaction costs and a lengthy planning phase. The IFI project offers residents generous compensation and the rights embodied in IFI involuntary safeguards, but a lack of effective livelihood support and poor communication provide cautionary notes. A third, rights-based approach by Vietnamese civil society organizations (CSOs) involves advocacy to achieve effective reallocation of state-managed forest land to displaced villagers. This chapter examines the potential for benefit-sharing mechanisms, IFIs, and CSOs, backed by new legislation and expanding space for civil society in Vietnam, to address the problems posed by inadequate local governance. It is found that these approaches show merit for replication domestically and in other developing nations, but they face continued institutional and budgetary shortcomings.

6.1 Overview

In Vietnam today even government officials are increasingly voicing concerns about the social and environmental costs of hydropower and suggesting more caution in pursuing further dam construction in Vietnam today (Thien Nhien, 2012). The central government has directed provincial people's committees to review current applications to eliminate inefficient projects or those with negative environmental or resettlement impacts. In Quang Nam province in central Vietnam, the provincial government cancelled 23 of 57 projects originally planned for the Vu Gia-Thu Bon river basin (VNExpress, 2012) and neighboring Kon Tum's provincial people's committee has cancelled plans for 21 of 48 installed or planned hydropower projects (Viet Nam News, 2013). On October 30, 2013, Vu Huy Hoang , the Minister of Industry and Trade, announced that no new large dams will be built after 2015, although 400 small and mid-sized dams will be constructed (VNCOLD, 2013). Displacement implications of this decision are unclear: while smaller-scale dams may result in less overall displacement, the fact that most depend on private investment may imply weaker national regulatory oversight and fewer investor resettlement safeguards in place. This burgeoning private sector investment is contiguous with ongoing decentralization and privatization of the power sector

in Vietnam in line with central government aims to reform the sector, widely criticized for mismanagement and speculative investments.

Despite a national regulatory framework in Vietnam that mandates higher levels of financial compensation than before, land-for-land compensation and post-resettlement livelihood assistance, a 2010 survey by a national institute found that 82 percent of dam-displaced residents become worse off than before after resettlement (Institute of Development Consultation, 2010). Researchers on dam-forced displacement in Vietnam report several common obstacles that have thwarted efforts to improve resettlement outcomes, including local government provision of agricultural land of insufficient quality and quantity and a lack of access to forests and fisheries, which many farmers depend on for supplemental income and enhanced year-round food security (see Pham, 2009; Beckman, 2011; Bui and Schreinemachers, 2011; Pham, 2011; Bui, Schreinemachers & Berger, 2012; and Dao, 2010). In addition, residents often do not receive full compensation (Bui, et al., 2012, Ty, 2009) for assets, or they experience conflict with host communities over access to natural resources (Dao, 2010; Vietnam Rivers, 2013). Finally, affected populations often are not allowed to fully participate in resettlement site selection, housing or other decisions and may be uninformed about resettlement plans and procedures, and there is typically no independent mechanism for adjudicating grievances over compensation or resettlement (Dao, 2010).

Of the many challenges to successful adaptation after dam-induced resettlement in Vietnam, the land issue appears to be particularly intractable. Vietnam has only 0.07 hectares of arable land per capita, and three-fourths of the land area is mountainous or hilly (World Bank, 2013), so arable land in many upland areas is at a premium. Local governments, legally assigned the main responsibility for resettling displaced residents since 2004 (see Decree No. 197/2004/ND-CP), may find it difficult to secure the agricultural land promised to resettled farmers in resettlement action plans. The recent influx of lowland majority Kinh farmers into Vietnamese upland regions, once almost exclusively inhabited by ethnic minority groups, has further heightened pressure on arable land in watershed areas (Sikor and Tan Quang Nguyen, 2007).

In their original sites many displaced farmers cultivated fertile riverine plots, including paddy fields. Most also practiced swidden cultivation, allowing upland plots to remain fallow on 5-10-year rotations. After displacement they typically receive narrow, less productive upland plots for sedentary cultivation. With surrounding forest often designated as state enterprise forest land or protected forest, resettled residents are enjoined from clearing forest for new cultivation plots, but without access to agrichemical inputs or training in intensive agriculture their yields on replacement plots may be poor (Beckman, 2011).

If the right to participate in decision-making and pursue grievances is not proffered and stable livelihoods and food security after resettlement cannot be secured by the primary stakeholders – the local government and the affected people themselves – due to poor capacity or weak community capitals, it is worth exploring the extent to which other stakeholders can contribute advocacy, expertise and financial resources. According to a World Bank document on Vietnamese infrastructure development: "Given plans to develop many [hydropower dam] projects over the medium-term, strong efforts are necessary to integrate knowledge from elsewhere and to build local capacities to achieve results which are sustainable over the long term" (2006, p. 30).

This chapter examines three external stakeholder approaches to improve outcomes for post-resettlement of development-displaced populations in Vietnam in light of growing government tolerance of an expanding civil society.[6] The approaches address different types of common challenges: payment for environmental services schemes by the hydropower authority promise sustainable income streams for poverty alleviation and forest conservation; international financial institutions (IFIs) bound by resettlement risk safeguards seek to improve residents' participation, strengthen environmental and social impact assessment and promote favorable terms of compensation; and non-governmental organizations (NGOs) engage in advocacy for displaced residents and may negotiate for reallocation of forest land. The authors investigate whether these stakeholders can liaise effectively with local government, the main implementation body, to advocate for affected populations and provide essential support for livelihoods and long-term community sustainability that so far have been lacking. The chapter will examine recent trends and issues for each of the three types of stakeholder activity – payment of environmental services schemes, resettlement support by IFIs and support for the displaced by domestic civil society organizations - followed by introduction of relevant case studies from central Vietnam. Next, the chapter will discuss relative strengths and weaknesses of each stakeholder approach and overall prospects for their institutionalized implementation in Vietnam, where a gradual devolution of centralized authority is promoting accommodation of involvement by increasingly autonomous civil society organizations (CSOs). The author concludes that for these approaches to be effectively and broadly realized the central government should consider creation of specialized local bodies for long-term resettlement support that incorporate external stakeholder expertise.

[6] While international NGOs such as World Vision or Save the Children may have a presence in resettlement villages, their activities have not specifically targeted dam-displaced populations but have been part of broader local poverty alleviation or health and nutrition initiatives so their role has not been examined in this chapter. It should be noted, however, that the International NGO Winrock has provided training for resettled villagers for PES schemes in several locations in Vietnam. For similar reasons other state actors which may provide crucial training in novel crop production or livestock husbandry, such as commune or district agricultural extension services (Schad, et al., 2013), will not be examined here.

6.2 Internal and external stakeholders involved in resettlement

If stable livelihoods and food security after resettlement cannot be secured by the primary stakeholders – the local government and the affected people themselves – due to poor capacity or weak community capitals, it is worth exploring the extent to which other stakeholders can play a more substantive role by contributing financial resources and expertise to post-resettlement development. According to a World Bank document on Vietnamese infrastructure development: "Given plans to develop many [hydropower dam] projects over the medium-term, strong efforts are necessary to integrate knowledge from elsewhere and to build local capacities to achieve results which are sustainable over the long term" (2006, p. 30). These stakeholders may include the hydropower authority (typically the parastatal utility company Electricity of Vietnam, or EVN), international financial institutions such as the Asian Development Bank or World Bank, and Vietnamese civil society organizations, particularly NGOs and university development centers. This chapter examines the burgeoning roles that each of these three categories of stakeholders is playing in post-resettlement support in Vietnam in light of growing government encouragement for participation and an expanding civil society.

6.3 The hydropower authority

6.3.1 Paying for forest environmental services

The displacement of local residents by dams and rural irrigation schemes poses a stark ethical quandary: while economic development is supposed to benefit all citizens, in this case one group of residents must take on the burden of suffering for "the greater good" (McDowell, 1996; De Wet, 2006; Cernea, 2008). A number of mechanisms have been proposed to achieve more equitable allocation of benefits and alleviate post-resettlement poverty, but one that has gained particular attention in Vietnam is the policy instrument known as payment for environmental services (PES). A PES scheme has been defined as "a voluntary transaction in which a well-defined environmental service (ES), or a form of land use likely to secure that service, is bought by at least one ES buyer from a minimum of one ES provider if and only if the provider continues to supply that service" (Wunder, 2005). PES schemes have been implemented as means of allocating funds to municipalities to restore degraded river watersheds or for irrigation association members to pay a fee for water use that goes to private upstream land owners. They may include public sector schemes, private market schemes and direct private deals between seller and buyer (Wunder, 2008).

In Vietnam, PES is regarded by the government as a key strategy for alleviating rural poverty and conserving the nation's dwindling forests and biodiversity (Catacutan, Hoang, Hoang and Tran, 2011). It is seen as especially promising for dam-displaced communities for the following reasons:

1. Allowing cultivation of tree plantations on a portion of the assigned land, along with regular PES-generated income, would help alleviate poverty for displaced households.
2. It relieves economic pressures on land-deficient resettled households that have contributed to illegal logging and conversion of protected forest for agricultural use.
3. PES participants gain greater awareness of forest ecosystem services and incentives to conserve forests.
4. It helps to address ethical concerns over inequitable distribution of the costs and benefits of hydropower dam construction.
5. It shifts some of the burden for supporting livelihood restoration for displaced populations from local government to the income-accruing project investors.
6. It promises a sustainable, long-term income stream for residents not contingent on dam construction or poverty alleviation project terms.

Recent payment for forest environmental services (PFES) legislation levies taxes at fixed rates on hydroelectric generation or water provision by major water beneficiaries, including hydropower utilities, drinking water or irrigation providers and ecotourism companies. The majority of the revenues raised accrue to local government, with a portion paid out in regular disbursements to local residents. In return, residents are expected to conserve the forest area in the river watershed by planting trees, monitoring changes in forest cover, patrolling to prevent illegal logging and forest maintenance. The rationale behind the scheme is that since hydropower and water suppliers benefit from ecosystem provisioning services such as steady flows of clean water and prevention of erosion, they should partially pay for the conservation of said services (Winrock, 2011).

PFES in a Vietnamese context is at variance with conventional definitions of the scheme in that participation and transactions by both providers and beneficiaries are not voluntary but state-mandated (Pham, Hoang and Campbell, 2008; Suhardiman, et al., 2013). Vietnamese PFES participants are allocated specific parcels of forest land, with use restricted to protection or forest plantations, although they are allowed to harvest non-timber forest products and limited amounts of firewood or building materials. However, even with devolution of legal rights to land use in protected forests, the participants are not allowed to sell, lease or otherwise trade their land, limiting potential revenue growth and incentives for ecosystem management (Pham, et al., 2008).

A 2008 government decree established a national regulatory framework for PFES (Kolinjivade and Sunderland, 2012) and PFES pilot programs were initiated in Lam Dong and Song La provinces in 2009-2010, after a pilot policy had been formulated by the Ministry of Agriculture and Rural Development (Suhardiman, et al., 2013) and an earlier ADB-funded technical assistance project in

Quang Nam province had concluded that benefit sharing of hydroelectric revenues could help support resettlement communities (ADB, 2010a). To help overcome government budgetary limitations and inexperience in PFES implementation, the American NGO Winrock International and the German Agency for International Cooperation provided crucial funding and trained residents in forest monitoring and conservation in the pilot programs (Phuc, et al., 2012; Winrock, 2011).

The government deemed the pilot programs as successful, with illegal logging reportedly halved and households receiving annual payments ranging from 10.5 to 12 million VND (US$540-615) in Lam Dong province (Catacutan, Hoang, Hoang and Tran, 2011) and lesser amounts in Song La. The stage was then set for scaling up application nationwide with the enactment of the 99/2010/ND-CP Law on Payment for Environmental Services in 2010. The law stipulates that three categories of ecosystem service beneficiaries, electricity utilities, public water utilities and ecotourism providers, pay for forest environmental services such as water regulation and soil conservation (for water and electric utilities) and for protection of landscape quality (for tourism companies). The rate is fixed at 20 VND per kilowatt hour for hydropower producers and 40 VND per cubic meters for water suppliers (Government of Vietnam, 2010). Ecotourism operators need to contribute between 0.5-2% of annual tourism revenues (Chiramba, et. al., 2011). Tax revenues are paid to the provincial government, then a portion is disbursed to a Forest Protection and Development Fund at the district level and subsequently to local households. The program has drawn considerable attention as one of the first such nationwide PES programs in Southeast Asia.

Neef and Thomas (2009) detailed a number of prerequisites for a well-functioning PES scheme, including identification of environmental services, market and participants; clear rewards and processes; and a sound legal and institutional framework. With the new law in place Vietnamese PFES schemes appear to meet most of these criteria, and they are regarded as particularly promising for resettlement communities, but with high transaction costs for implementation, problems with clarifying household and community tenure rights and modest financial incentives, their potential viability and benefits for a broader pool of potential participants are unclear (Phuc, Dressler, Mahanty, Thu and Zingerli, 2012; McElwee, 2012). Many provinces are now planning pilot projects, but the complexity and expense of baseline surveys and forest monitoring has necessitated external assistance by consultants and aid donors and prevented rapid implementation.

6.3.2 PFES case study: Dong Giang district, Quang Nam province

In Dong Giang district in Quang Nam province, central Vietnam, a pilot PFES program was first conducted in two villages from 2009, in accordance with the implementation scheme shown in Figure 1. In interviews conducted by the authors in early 2013 a village chief and district officials

claimed that, as a result of regular forest patrolling and construction and manning of a road block, incidents of illegal logging declined by 50% during the pilot project. In January 2013 the project was expanded to two adjacent resettlement villages, Aden and Tro Gung (see Figure 6.2).

Forest land was allotted to households by lottery to ameliorate claims of unfairness over varying forest quality. Participating villagers were trained in workshops led by the INGO Winrock about forest ecosystem services and forest maintenance and monitoring, and the Asian Development Bank (ADB) covered costs for assessment of forest quality and training courses. Each household has been allocated 22 hectares of forest to protect, and one person from each household is expected to provide approximately one day's labor per week. Illegal loggers found trying to enter the protected area are reported to local forest security officers for follow-up. Regular monitoring of forest quality is conducted by members of the A Vuong forest protection management unit. Funding and management of the benefit-sharing scheme are depicted in Figure 6.1.

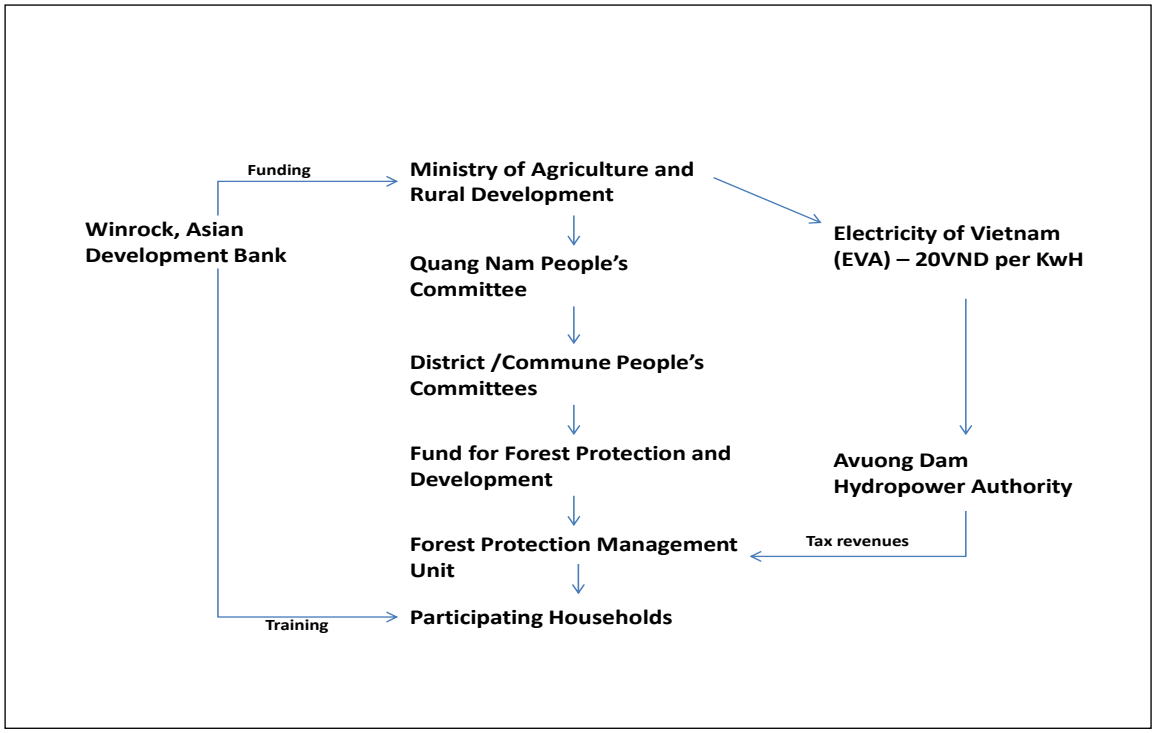

Figure 6.1. Institutional framework for PES scheme in Dong Giang district, Quang Nam province

In the resettlement village of Aden, Dong Giang district, residents were divided into four groups for monitoring, with 13 household residents in each group. In this project each household is paid 274,000 VND per hectare per year, for annual income of 6.028 million VND, or 502,333 VND per month, less than the household payments reported for the pilot case study in Lam Dong province (Winrock, 2011). The current average reported household income for Aden residents is 732,671

VND per month (according to a 2012 household survey), so the additional revenue would account for 40% of total average monthly income. However for these subsistence farmers, even this large boost in household income would have negligible effects in lifting families above the rural poverty line of 400,000 VND per capita per month.

Quang Nam province retains a 60% share of the tax on A Vuong dam hydroelectric generation, amounting to 12 billion VND per year. The remaining 40% share goes to the affected districts of Dong Giang, Tay Giang and Nam Giang (Doan, 2011). However, transaction costs are high, according to an officer with the district forest protection management unit (personal communication, 2012), partly due to implementation of an initial baseline study to determine initial forest cover, quality and composition and periodic forest monitoring. Tax revenues alone couldn't fully fund the forest protection project, so ADB funding has been critical. For residents the major opportunity cost of participation is the requirement that they forego traditional swidden practices of converting protected forest land for upland rice or other types of agriculture to secure needed food security. However, in this case forest land that had already been converted to shifting cultivation was excluded from demarcated forest areas to allow for continuing use.

Figure 6.2. PFES pilot project. Above: PFES road checkpoint, mapping forest land; Below: poster explaining PFES scheme, harvested acacia timber

As noted earlier, Vietnamese PFES schemes differ from conventional PES initiatives in that participation by both service providers and beneficiaries is mandated and residents have no

opportunity to renegotiate payment terms directly with beneficiaries. Although Decree 99/2010/ND-CP requires application of a K-coefficient that differentiates payment to residents depending on forest type, forest cover, ease of access and other variables, which has proven an effective way of remunerating residents fairly for their efforts (Catacutan, et al., 2011), villagers have indicated a preference for universal payment levels, which has prevented K-coefficients from being adopted in Dong Giang. Although the FPMU indicated that they plan to effect payment based on monitored performance in the future, currently each household receives the same amount, reducing performance incentives.

PFES schemes have been regarded by some local officials and researchers as a "silver bullet" policy instrument for dam-affected communities (McElwee, 2011). However, although Dong Giang district residents and government alike expressed great hope for its contribution to poverty alleviation and forest protection the PFES initiative may more accurately be regarded as a modest welfare program that secures a small income stream for residents but not substantial economic security, providing insufficient training and support to enable residents to gain new livelihood skills or enhance future incomes. The program's complexity, high costs and the necessity of untangling competing tenure claims to forest land may also pose challenges to implementation for all resettled communities (Phuc, et al., 2012).

6.4 International financial institutions (IFIs)

6.4.1 Improving compensation and social inclusion

Two IFIs, the World Bank and Asian Development Bank, have been involved in hydropower sector support in Vietnam since the 1990s, when they carried out planning studies for hydropower development (Middleton, Garcia and Foran, 2009). More recently they have financed transmission lines to transmit electricity produced at large hydropower dam facilities such as Yali Falls and Son La to major urban centers. However, they have been reluctant until recently to directly invest in dam construction projects. Middleton, et al. (2009) suggest that this may be partly due to the poor record to date of Vietnamese project authorities in authorizing full-scale social and environmental impact assessments and the poor outcomes associated with resettlement. On their side, the Vietnamese government may be reluctant to be held accountable to relatively strict IFI guidelines, including provisions for high compensation payouts, thorough social and environmental impact assessment and time-staking decision-making and information disclosure processes which could be construed as precedents for future dam project implementation, thus adding to project terms and complexity. According to Middleton, et al. (2009), the government reportedly chose to work with a Russian investor on the Sesan 3 dam rather than continue with ADB in the early 2000s, due to the ADB's

insistence on providing compensation to downstream Cambodian villagers who were inundated by sudden flood water releases from the nearby Yali Falls dam in 2005.

Although partners in a project must abide by relevant national laws, IFI investment must also comply with safeguard requirements, ensuring that livelihood enhancement, participation, gender empowerment and other principles are incorporated in project planning. Most IFI safeguards stipulate that roads, houses, schools, electricity, water supplies and other infrastructure must be completed before resettlement, and that resettled households be provided land-for-land compensation and cash compensation at prevailing market rates for inundated land and assets and livelihood training and support (see ADB, 2009; World Bank, 2001; African Development Bank, 2003) .

An analysis of the outcomes of eight Asian Development Bank-funded projects in resettlement villages from the 1990s implemented according to ADB involuntary resettlement guidelines showed that compensation, improved housing and infrastructure and livelihood restoration were enhanced for residents (Tamondong, 2008). A 2011 report by the Bank's Independent Evaluation Group noted that half of the 50 ADB dam projects since 1986 have positively affected living standards for displaced persons, adding that "the Bank's environmental and resettlement guidelines appeared to have a positive impact on the dam projects that the Bank has financed." However, there has been criticism of the safeguard mechanisms of virtually all IFIs for retaining the option of seeking to merely "restore prior living standards," even though safeguards for the ADB and World Bank, among others, state that resettlement should be conceived as a sustainable development project that will allow resettlers the opportunity to share project benefits and improve their livelihoods (Scudder, 2005; Wilmsen, 2011).

In recent years there has been increasing investment in Vietnamese dam projects by private corporations and financial institutions that neither abide by the Equator Principles or other safeguards nor require thorough environmental and social impact assessments .(Middleton, et al., 2009; McDonald, Bosshard and Brewer, 2009.) As the government-controlled EVN is the lead investor in many dam projects the government may find IFI safeguard requirements financially onerous, given a desire to prioritize cost reduction and rapid project completion. With this growing private investor involvement, the future role of IFIs in Vietnamese hydropower construction is difficult to project.

6.4.2 IFI case study: Asian Development Bank and Song Bung 4 dam

In 2008 the Asian Development Bank approved the first direct investment by an IFI in hydropower dam construction in Vietnam with a US$196 million loan for the 156MW Song Bung 4 dam in Nam Giang district, Quang Nam province.[7] The stated objective was "meeting Vietnam's increasing power demand in an environmentally sustainable and socially inclusive manner" (ADB, 2007), which alludes to two elements – a comprehensive social and environmental impact assessment and institutional mechanisms for transparent information disclosure and participation in resettlement decision-making by affected persons (APs) – that have been criticized for poor or nonexistent implementation in other Vietnamese large dam projects (Dao, 2010). The project included a US$2 million grant from the Japan Fund for Poverty Reduction for village-level initiatives, including training and agricultural support, to achieve livelihood restoration and improvement (Bank Information Center, 2013). For the ADB, an important component of the dam project was the resettlement and ethnic minority development plan (REMDP) that details resettlement procedures, compensation and livelihood support provisions, and grievance mechanisms. Compliance with the ADB safeguards generally exceeds what is required to meet the provisions of Vietnamese national law in assisting displaced people. For example, the safeguards state that compensation for income loss must be provided to all affected resettlers rather than only to registered businesses, as required by the Vietnamese government, and that customary land rights be recognized by protection or compensation, an area not yet fully recognized by Vietnamese law (ADB, 2010b).

The Song Bung 4 dam project displaced 224 households with a total of 939 residents of four villages in Nam Giang district, Quang Nam province. Nearly all of them belong to the Co-tu ethnic minority group (ADB, 2010). They were compensated for homes, land and productive assets and provided with financial support for healthcare, relocation, house construction costs and labor, development of production techniques, income restoration and food security (ADB, 2013). From 2006 until the villages began relocating in 2012 frequent meetings and consultations were held with all affected residents about resettlement plans and procedures. A Resettlement Management and Implementation Unit comprising project staff, local government and NGO and village representatives was established at the district level along with village-level resident groups. Although there were complaints from outside observers initially that information disclosure on compensation and resettlement was inadequate (Bank Information Center, 2009), later monitors felt that efforts had been made to improve transparency and address concerns in community meetings (ADB, 2013;

[7] It was reported that the ADB had considered funding the Sesan 3 dam on the border with Cambodia in the early 2000s but they withdrew after considering possible adverse environmental impacts on Cambodian villages downstream (Middleton, Garcia & Foran, 2009).

Vietnam River Network, 2012a). A gender action plan promoted involvement of women in meetings, on committees and in administrative roles and as participants in training and employment schemes. Cash compensation was paid into bank accounts, with husband and wife each receiving half the total amount in separate accounts, to enhance the women's financial security and foster more responsible household account management.

During two field visits in 2012 and 2013 to Thon 2, one of four relocated villages, residents noted that their living conditions had greatly approved overall, crediting generous compensation, excellent infrastructure and social services such as healthcare and education. Women appreciated the opportunity to play responsible roles in meetings and training sessions. Several also noted a decrease in domestic abuse. However others reported that men still didn't want their wives to attend meetings or training courses, and the head of the Women's Union explained, "Although we [wives] have our own bank accounts, if your husband tells you to withdraw money from your account it's difficult to refuse" (personal communication, 2013).

As indicated during interviews and in reports by the Vietnam Rivers Network (2013) and an independent monitoring group hired by ADB (2013), a major source of villager dissatisfaction was with the volume and quality of replacement agricultural land, which residents claimed had only half the productivity of their original agricultural plots. Their 1.5-hectare plots for upland cultivation did not allow for traditional shifting cultivation, the residents complained, and they had lost much of their livestock to disease. Restricted access to river fisheries forced many residents to purchase fish for consumption. They also complained about inadequate water supplies and inappropriate agricultural training courses by Canadian INGO consultants who had failed to assess soil composition as promised or to introduce appropriate crops or techniques for local conditions. Although most families now have savings in the bank, they voiced serious concerns about future food security and sustainable livelihoods once their compensation funds were spent.

Interviews with villagers and project management also revealed poor communication and mistrust between both sides, with three Thon 2 villagers stating that their grievances weren't being transmitted to the ADB or local government and two resettlement project external manager criticizing the villagers' "low adaptive capacity" and "penchant for making complaints." According to the Vietnam River Network report (2013) and the headman of an adjacent host village, Pa Pang, conflict also arose over access to productive land and protected forest between Thong 2 village and Pa Pang, necessitating frequent commune-level meetings. However the Pa Pang headman stated that villagers were highly satisfied with improved educational and medical services and physical infrastructure as a result of the resettlement project (2012).

Compensation at Thon 2 ranged from US$14,286 to $195,138, with an average of $86,708 (ADB, 2011), far exceeding that reported for other Vietnamese hydropower projects to date (see Dao Nga, 2010; Ty, 2009; Beckman, 2011; Bui and Schreinemachers, 2011; Bui, Schreinemachers and Berger, 2012). However, a large proportion of the compensation funds were spent on homes, leaving several households with relatively little remaining in their bank accounts (see Figure 6.3). Thon 2 villagers reported spending up to 600 million dong ($30,000) on constructing and furnishing spacious two-story homes, a large amount for rural Vietnam.[8] There was little spending on productive activities or investment to ensure sustainable livelihoods after the project cycle ends in 2014 (ADB, 2013). In addition, the project provided little training in marketing of livestock and agricultural products. Currently most villagers sell their products to itinerate Kinh traders without investigating or understanding prevailing market prices (ADB, 2013).

Figure 6.3. Houses constructed by Song Bung 4 residents after resettlement

Song Bung 4's well-monitored compliance with safeguard policies may have a salutary effect on future relocation projects in Vietnam, particularly as concerns compensation, social inclusion, participation in resettlement planning and information disclosure. The Quang Nam province government, for one, has already revised its resettlement policies to require improved compensation and livelihood support and more generous land allocation (Article 33, Provincial Decree 23 ND/UBND on compensation, support and resettlement for government land acquisition, 2010). However, the project's terms of compensation at maximum allowable levels, funded by the ADB loan, risks distorting APs' expectations for compensation in future dam projects beyond the local

[8] By comparison, the homes built for villagers resettled due to the A Vuong dam in neighboring Dong Giang district were assessed as having a market value of 75 million VND (US$3,558), although residents claimed that the actual value was much lower.

government's ability or willingness to pay, particularly for dam-forced resettlement administered solely by provincial governments and in accordance with Vietnamese law.

As Koenig (2006) wrote, involvement with prestigious, well-funded IFIs can advance the interests of marginalized local residents by securing resources and representation with the local government and national government. However, there may be concern whether the activity of the ADB, World Bank and other IFIs, which aims to satisfy internal DFDR criteria, always reflects the priorities or salient interests of APs. For residents, participation in decision-making and gender empowerment, while valued objectives, are less critical than securing productive land and diversified income sources.

6.5 Vietnamese civil society organizations (CSOs)

6.5.1 Advocacy and land reallocation amidst an expanding civil society sphere

In many developing countries domestic CSOs have played significant roles in post-resettlement support (Koenig, 2006). In central India, for example, a number of CSOs have supported livelihood training and infrastructure development of resettlement villages, despite actively protesting construction of the Narmada River dams that had caused the initial displacement (Pandya, 2013). Their involvement is actively sought and financed by state and national government development and resettlement officials, in part due to a tradition of CSO development activity to supplement limited local government resources and capacities.

That tradition is lacking in Vietnam, where domestic CSOs were historically regarded by the government as antagonists (Kerkvliet, 2003a). While international NGOs have been allowed to operate in Vietnam since the 1990s and some, like World Vision and Winrock, have been active in resettlement communities, Vietnamese CSOs have played little role until recently.

Vietnam has a vibrant tradition of resident affiliation in village-level social clubs and mutual aid societies (Dalton and Ong, 2003), yet the overweening authority of Communist Party leadership from 1975 constricted the scope for autonomous group activities and affiliations not predicated on Marxist-Leninist ideology. Vietnam's Marxist-Leninist tripartite model of society consists of Communist party, people and government, with individuals welcome to form their own associations as long as these groups support state policy, try to improve state services or represent marginalized groups to the government in a non-confrontational way (Thayer, 2009). As Landau (2008) notes, a Gramscian characterization of civil society as an arena of conflicting ideas in which the state seeks to establish hegemony would appear to be more true of Vietnam than the liberal conception of civil society as being completely autonomous of the state.

The government has strongly promoted affiliation with Communist Party-linked "mass organizations" (đoàn thê) such as the Ho Chi Minh Youth Union, Vietnam Women's Union, Farmers' Union and War Veterans' Association chapters that operate at the village or town level under the umbrella organization the Vietnam Fatherland Front (Landau, 2008). Membership is widespread: The Women's Union alone, for example, claims membership of 13 million (Waibel and Gluck, 2013). Although many researchers would characterize mass organizations as CSOs, their role as intermediaries between the Communist party and ordinary citizens places them further along the continuum of government affiliation than groups typically identified as CSOs (Norlund, 2007). For the government, these mass organizations help to transmit and explain Party policies and initiatives, while for residents membership in these groups represents a means of enhancing social capital by accessing positions and future influence (Schad, Thai, Hoffman, Neef, Friederichsen and Roessler, 2013). In rural areas, in particular, membership in groups such as the Farmers' Union or Women's Union may be seen as an entrée to participation in agricultural training and livelihood initiatives and receptions of seeds, livestock and other concrete benefits. In many rural villages, household membership in mass organizations is nearly universal, as residents accrue material benefits as well as mutual support in the form of cooperative labor or assistance when household members fall ill or suffer financial difficulties.

The *doi moi* economic liberalization reforms of the 1980s weakened the Communist Party's grip on society and fostered growing tolerance for autonomous groups, with Landau (2008) reporting an increase in locally registered associations from over 300 in 1990 to over 1400 in 2000, dealing with such concerns as education, environmental issues, and social welfare. Increasing liberalization and scope for local autonomy evolved with enactment of legislation such as the grassroots democratization decree (Decree 29/1998/ND-CP) of 1998 (amended by another decree in 2003), which prescribed mechanisms for allowing residents to participate at the commune and village levels in local government decision-making (Duong, 2004). Although implementation of the legislation has been weak, it has broadened the space for negotiation between state and civil society (Norlund, 2007). Today, rather than the past "dominating state" model of top-down socialist governance in all spheres, Vietnam presents a more dynamic, "dialogical" model of state and society listening to and influencing each other (Kerkvliet, 2003b, p.49).

Kerkvliet (2003b) observed three emerging trends for Vietnamese civil society: an expanded legal framework for recognizing and protecting NGOs, greater domestic media coverage and more diversified content, and a proliferation of civic organizations, from NGOs to mutual aid and religious societies. Domestic development-oriented groups have won far greater government acceptance than

religious or political activist groups, which are still often regarded as a potential threat to the state (Thayer, 2009).

6.5.2 Non-governmental organizations: Expanding their role

Many private organizations that do not seek profits and have articulated clear social objectives label themselves as non-profit organizations, in part to more easily attract foreign funding or to tacitly distance themselves from the government (Kerkvliet, 2003a). However, "NGO" is a highly contested designation: To date no exact legal definition of an NGO exists in Vietnam (Thaveeporn, 2003). The government maintains different legal categories of civil society organizations, such as "social and charitable funds," "scientific" or "technological institutions," and "research and development institutions" (Mayhew, 2005). The government requires that all CSOs be affiliated with and overseen by an official organizational umbrella group such as the Vietnam Union of Science and Technological Association (VUSTA), the largest such grouping, with approximately 500,000 members (ICSU, 2013). According to one local NGO official, non-governmental organizations are periodically visited by police and government officials to monitor their activities, although they experience less rigorous monitoring than in previous years when paying visits to project sites (personal communication, 2013).

VUSTA estimated that there were 10,000 self-proclaimed NGOs in 2003 (Lux and Strassman, 2003); using a more restrictive definition Norlund (2007) estimated a total of 1,300-2,000, engaged in charity, research and development, consultancy, education and health. In the central Vietnam city of Hue, for example, only four local civil society organizations satisfy the registration criteria for official NGO status, including capital of 1 billion Vietnam dong or more, according to the provincial government organization overseeing international NGOs, the Vietnam Union of Friendship Organizations of Thua Thien Hue Province (personal communication, 2013). Most self-proclaimed NGOs are small, with limited funding, young and inexperienced staff and high turnover, as staff often leave for higher-paying jobs with business or INGOs (Taylor, Pham, and Huynh, 2012).

Local NGOs are displaying increasing sophistication and influence while operating within state restrictions that are both onerous and often mutable (Lux and Straussman, 2004). Some development or welfare NGOs are led by former government officials, which facilitates approval of stringent registration and documentation procedures (Mayhew, 2005); others are operated by Vietnamese who formerly worked for INGOs. Some NGOs have been successful at receiving funding and support from ODA agencies or INGOs seeking local partners for development projects. According to Norlund (2007), foreign funding accounts for approximately 25% or more of total NGO funds, but presumably a higher percentage for development-oriented groups.

The participation of local NGOs in development projects was eased in 2003 by the passage of Decree 79/2003/ND-CP, which allowed community-based groups to participate in commune-level development (Thayer, 2009). A 2010 law (Decree 45/2010/ND-CP on the Organizations, Activities and Management of Associations) allowed NGOs to "participate in programs, projects, studies and counseling and critical comment and examination" but only "at the request of state agencies," thus restricting the potential scope for public advocacy of NGOs (USIG, 2013).

Local NGOs are displaying increasing sophistication and influence while operating within state restrictions (Lux and Straussman, 2004). Some Vietnamese NGOs have effectively advocated for change in displacement-linked policy at the national level, by forming policy groups that bring together scientists, NGO representatives and national assembly members. The Vietnam River Network, an umbrella organization of NGOs and environmentalists concerned with river protection and sustainable development, is conducting post-construction social and environmental assessments of the impacts of selected dams (Vietnam River Network, 2012b). Increasing NGO collaboration with scientific experts and journalists allows them to exchange detailed information and to publicize findings. For example, based on information received from the Hanoi-based Green Innovation and Development Center (Green ID) and other members of the Vietnam River Network, Vietnamese newspaper reporters wrote articles in 2013 warning of potential environmental impacts of construction of the Dong Nai 6 and 6A hydropower dams on the adjoining Cat Tien national park in southern Dong Nai province. The Ministry of Natural Resources and Environment subsequently cancelled plans for the dam projects (personal communication, Green ID, 2013).

6.5.3 CSO case study: Center for Social Research and Development

The Center for Social Research and Development (CSRD), a legally recognized Vietnamese NGO based in Hue, central Vietnam, focuses its efforts on climate change and water resource management. Although affiliated with VUSTA the NGO is financially and administratively independent, according to director Lam Thi Thu Suu (personal communication, 2013), with most funding coming from INGOs and bilateral ODA. CRSD implemented a project from 2010-2012 in eight ethnic minority villages in two communes in central Thua Thien Hue province that had been resettled due to construction of an irrigation dam and the Binh Diem hydropower dam. The project was funded by a 155,000 Euro grant from ICCO, the Dutch government-funded INGO, and carried out by CSRD and another local NGO, the Consultative and Research Center on Natural Resources Management (CORENARM), in order to improve access to forest land, increase business skills and promote gender awareness among APs.

The initiative for reallocating forest land was of particular note. Most of the land in upland areas of Vietnam is designated as forest land. All forest land in Vietnam is owned by the state, although land use contracts or agreements can be extended for access, use and management of forest land to individuals and communities (Kolinjivadai and Sunderland, 2012). Forests are classified into three types: special use, production forest and protection forest. Special use forest includes national parks and nature reserves. Protection forest includes most remaining areas of primary forest with high levels of biodiversity and endangered plants and wildlife, administered by local forest protection management units (FPMUs), while productive forest is forest that can be used for plantations of income-generating trees such as acacia and bamboo. State forest enterprises currently control millions of hectares of productive forest land; they may retain control even when the land is not being used and may deny access to local residents for firewood or non-timber forest products (Sunderlin, 2006, Clement and Amezaga, 2009).

Much of the land near resettled villages is classified as protected forests: even when residents gain land use rights for community forestry, they are not allowed to transfer, lease or exchange land, harvest wood or clear forest for cultivation. The national Law on Forest Protection and Development, enacted in 2004, provides for the resurveying and reallocation of unused state forest enterprise land to poor and landless rural households in order to decrease deforestation and expand revenues but devolution of land title has proceeded slowly, benefitting only a small percentage of rural poor (McElwee, 2009). According to Thank and Sikor (2006, p. 407), "Devolution works by repositioning state actors in relations to other actors, that is, by modifying the positions of actors within existing power relations." State forest enterprises are understandably reluctant to cede control of income-producing land, especially the most fertile land, to marginalized local residents (Sunderlin, 2006), so reallocated land is often of poor quality or remotely located, making it difficult for local residents to cultivate (McElwee, 2009).

CSRD sought to help address the lack of adequate productive land by promoting forest land reallocation. With the cooperation of the district FPMU, the NGOs surveyed and identified 169 hectares of unutilized land near the resettled villages. They negotiated with the district government, the provincial Department of Natural Resources and the FPMU to reallocate the land to resettled households in four resettlement villages for plantation of indigenous bamboo and other trees. In one commune 91 hectares of forest were provided to individual households, along with land use certificates. In the other commune three communities received 78 hectares of protected forest for community forest management, along with land use certificates. CSRD led workshops on land law and land use rights for residents, and they trained local officials in land use planning, land allocation processes and licensing of forest land use rights. According to Binh Thanh commune officials, the

training increased their awareness of residents' needs and willingness to collaborate on development initiatives (personal communication, 2013). Other CSRD workshops taught communication and negotiation skills, raised awareness of gender issues and human rights, and provided residents with a forum for discussing post-resettlement compensation and support. CSRD's partner NGO, CORENARM, held training courses on sustainable land use, veterinary skills, new crop introduction and value chains for agroforestry.

Figure 6.4 Communication skills workshop led by CSRD, 2014

CSRD staff asserted that greater understanding of the local legal and administrative context and residents' needs makes Vietnamese NGOs more effective than INGOs in advocating for APs with local officials. They are well-versed in the exigencies of negotiations with the FMPU over land reallocation, working patiently to persuade the board to cede the forest land under its control. They maintain longstanding ties with local governments, and they often bring together representatives of resettled and downstream communities, NGOs and local officials to exchange experiences and strategies in workshops and public fora. Although they lack the deep pockets of many INGOs, they are experienced in using small budgets effectively (personal communication, Lam Thi Thu Suu, 2013). However, the need for extensive negotiations to achieve even limited land reallocation underscores the challenges facing large-scale replication; the ability of CSOs in general to effect reallocation of land for resettled villagers by FMPU officials remains undetermined.

6.5.4 Vietnamese universities: Building on strong local ties

Another category of CSOs that have been active in resettlement support are the rural development centers that can be found at many Vietnamese universities, particularly universities of agriculture and forestry, which work with district or provincial governments to implement livelihood, managerial and agricultural initiatives. The first centers began activities after Decision 3059/QD-TCCB was promulgated in 1992 by the Ministry of Education and Training, allowing Vietnamese universities to procure funding from foreign ODA agencies or international NGOs. These centers, though typically administered and staffed by national universities, often have outside

project funding, and may characterize themselves as non-governmental organizations, reflecting the blurred boundaries of state and civil society in Vietnam.

Rural development centers can draw on the expertise of university faculty and researchers in agriculture, livestock husbandry, forestry, sanitation, environmental conservation and other fields and can pilot new technologies and approaches in rural communities. Rural residents and officials gain from inclusion in development initiatives and training courses. Local governments can harness center expertise to supplement their own agricultural extension services.

Because Vietnamese universities often dispatch faculty to remote rural areas to teach extension courses to adult students (often local officials), development center staff can call on university alumni at every level of local government, easing the local approval process for development initiatives and allowing staff to advocate on a personal level for the needs of APs. In addition, universities can recruit their ethnic minority students to help translate local languages, and university faculty are often familiar with local climatic and soil conditions and locally appropriate crops and livestock (personal communication, September 20, 2013).

The Centre for Rural Development in Central Vietnam (CRD) of Hue University of Agriculture and Forestry is one of the best-known university CSOs in central Vietnam. In a recent project funded by a Danish NGO, CRD researchers worked with commune officials, the Thien Thua Hue province department of natural resources and the local forest protection management unit to identify degraded forest land beside the Binh Dien dam reservoir for reallocation to six groups of resettled farmers for community forestry. The farmers planted indigenous bamboo species on 5-hectare plots, thereby contributing to forest conservation and gaining a new source of income (CRD 2013).

6.6 Summary

Although formerly most resettlement and post-resettlement support was undertaken by local governments working with international NGOs, recognition of the need for expanded stakeholder involvement, along with a growing civil society in Vietnam, has created opportunities for external stakeholders to become involved and new initiatives to be implemented. In answer to research question 4 (see Chapter 2.2) asking about the roles that can be played by internal and external stakeholders to improve long-term sustainability for DPs in Vietnam, these would depends on the strengths, limitations and resources available to each category of stakeholder, as explained in Chapter 7. The activities may include payment for environmental services schemes, generous compensation and post-resettlement support from IFIs, advocacy and training by Vietnamese NGOs and the transfer of expertise by Vietnamese university rural development centers.

With the passage of a Law on Payment for Forest Environmental Services in 2010, resettled households may benefit from a sustainable new source of income that can help alleviate poverty while conserving forests. However, high transaction costs and complex monitoring and assessment requirements make PES schemes difficult to implement, and they offer limited opportunities for training or livelihood improvement.

IFIs like ADB and World Bank must adhere to involuntary resettlement and ethnic minority safeguards that greatly exceed what is required by Vietnamese law or conventional practice, thus potentially securing residents greater social inclusion, access to information, gender empowerment, participation in decision-making and grievance adjudication mechanisms, and they can positively influence subsequent local policies and implementation. At the same time, a lack of appreciation or prioritization of local interests or government sensitivities may complicate government-IGO-village relations.

Vietnamese NGOs and universities can serve as advocates for resettled communities, helping to secure forest land for income generation and to train rural residents in land laws and human rights, new agricultural techniques, marketing and business skills, allowing them to strengthen rural livelihoods. However, depending on external stakeholders to pressure individual forest management units for forest reallocation risks being little more than a piecemeal solution that requires broader institutional support.

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CHAPTER 7. CONCLUSION

This chapter briefly summarizes the findings of chapters 1-6 by reviewing current conceptualizing about displacement and resettlement induced by development, explaining the current state of dam-induced displacement in Vietnam, and discussing the research questions that were explored and the methodologies that were applied in the case studies. The results of each case study and general findings are presented and overall conclusions are introduced. Finally, the author presents an argument for required changes in resettlement practice and policy that can be implemented not only in Vietnam but in all developing nations, in order to transform affected populations from victims to beneficiaries of development.

7.1 Synopses of earlier chapters

Chapter 1. The rapid expansion in construction of large dams across the developing world during recent decades, mainly to secure hydroelectric power and irrigation supplies, has raised environmental, social, and even ethical concerns that remain to be adequately addressed. Despite the considerable progress documented in recent years in improving the scope and efficacy of compensation and rehabilitation policy and planning, the literature suggests that today most displaced residents continue to be marginalized by the process of resettlement. In the words of Michael Cernea (2008, p. 17), "the magnitude of the combined material and non-material losses and the impoverishment imposed on those displaced far surpass the redeeming powers of compensation 'solutions.'"

In Vietnam, where over 200,000 residents have been displaced to date by dam construction, with over 80% found to be worse off after resettlement, criticism of resettlement implementation continues to be voiced, particularly for poor local implementation, inadequate provision of replacement land, lack of transparency in provision of information and lack of informed consent, and exclusion of affected residents from resettlement decision-making.

Chapter 2. The research described in this thesis combined quantitative methods (household surveys for all residents in the two primary research sites) and qualitative methods (semi-structured household interviews, focus group interviews, interviews with key informants, and participant observation) enhanced by a literature review and access to extensive secondary sources related to Asian Development Bank and NGO projects conducted at the research sites. The household survey data was analyzed using SPSS software to clarify overall mean scores, range and standard deviations and significant trends.

The main objective of the research was to understand more about the factors affecting resettlement outcomes using an integrated perspective that employs social science and environmental perspectives. It examines how participation by DPs, community capitals, expertise and new approaches by both internal and external stakeholders in a resettlement project can influence outcomes.

Chapter 3. Research on four indigenous ethnic minority villages displaced in 2006 by construction of the A Vuong hydropower dam in Quang Nam province revealed that the principal factors contributing to adverse resettlement outcomes were poor replacement land with greatly reduced fertility, leading to increased food insecurity and conversion of protected forest land for agricultural cultivation, and an inability to participate meaningfully in resettlement decisions, which led to poor housing conditions and increased disaster risk when villages were resettled on a landslide-prone riverbank. Institutionalized inclusion of affected people in critical decisions such as compensation, housing, and resettlement village siting can only be effective if government officials evince greater trust in the ability of ethnic minority residents to make informed decisions.

Chapter 4. This chapter employed a sustainable livelihoods framework to identify the various types of community capitals possessed by displaced households and communities and understand how these resources can be operationalized for post-resettlement adaptation and resilience. It was found that although physical capital improved, with provision of electricity, roads, schools and other infrastructure, a decline in wildlife and fisheries, forest biodiversity, arable land and other types of natural capital constrained the ability of residents to adapt to resettlement. Poor human and financial capital limited their ability to adopt non-agricultural livelihood strategies such as migration or agricultural strategies such as expansion of cash crops or crop diversification. The residents were found to possess strong social and cultural capital, however, which allowed them to work together to build a culturally significant community house and to apply traditional construction skills to greatly improve their housing conditions. Since their communities remained largely intact after resettlement, with the original village names, residents were able to retain strong community affiliation, which has improved community resilience. It was suggested that resettlement planners incorporate an understanding of indigenous knowledge, land use and other practices to improve future outcomes.

Chapter 5. The displacement of local residents by hydropower dam construction not only impacts the livelihoods and living conditions of the affected populations, it also has profound implications for the economic, environmental and social sustainability of the surrounding river basin. Impacts on river basins may be direct, such as reduced forest cover due to construction of roads, housing and other infrastructure and impacts of reservoir impoundment on wildlife and fisheries. As revealed by

the case study in Quang Nam province there may also be indirect impacts, such as increased in-migration and illegal logging due to improved road access, conflicts between host and resettled populations over land, employment or natural resources, and loss of biodiversity from forest fragmentation. If resettled residents receive inadequate replacement land or suffer curtailed access to common pool forests and rivers they may be compelled to convert forest land to agricultural plots to secure food security, thereby further reducing forest area.

Addressing these concerns over sustainability requires an integrated lake basin management approach by which adversely affected resettled residents become beneficiaries of the hydroelectric project. Benefit-sharing can include electrification, irrigation and water supplies from the impounded reservoir, and providing residents with access to reservoir fisheries and drawdown areas for cultivation. Residents can also be part of reservoir management to ensure consideration of their demands for reservoir resources.

Chapter 6. The continuing difficulty in restoring or improving livelihoods in the case study communities raises the question: can other stakeholders play a role in providing resources or expertise that can improve long-term community resilience and sustainability? Some new national initiatives and emerging societal trends provide encouragement for broader stakeholder involvement. One is the promulgation of a new law, 99/2010/ND-CP Law on Payment for Environmental Services (PES), creating a legal framework for nationwide implementation of a benefit-sharing mechanism based on a tax on hydroelectric generation. The law specifies that the proceeds of the tax will accrue to local governments and to resettled households, paying residents to maintain and protect watershed forests against illegal logging or other types of degradation. The PES scheme has shown promise in several pilot projects in Vietnam. However examination of implementation in the case study site has found that the project requires input of expertise from international non-governmental organizations and funding from external donors to be economically and practically feasible.

The chapter also examines the role of international financial institutions (IFIs) such as the World Bank and the Asian Development Bank (ADB) that apply strict involuntary resettlement safeguards and additional safeguards for indigenous ethnic minorities when investing in a dam project. By establishing inclusive village-level resettlement management units and compensation boards with resident participation they institutionalize generous compensation practices and information disclosure, and these practices have already influenced changes in resettlement laws in Quang Nam province, where the ADB's Song Bung 4 project is taking place. However poor communication between local government, residents and ADB representatives and continuing concerns over land

quality and livelihood training have raised questions about the ADB's priorities and domination of power relations with other stakeholders.

Today Vietnam is experiencing a cautious expansion of civil society, and non-governmental organizations are proliferating in every sphere. Although Vietnamese NGOs lack clear legal status and most are poorly funded and operated, they are playing a growing role as local partners of international NGOs in development projects and forceful advocates and intermediaries for local residents to local and national officials. In resettled communities domestic NGOs can train local officials in governance and can educate local residents about land issues and hold training workshops in business and livelihood skills. They can also identify unutilized production forest land and propose its reallocation by forest management authorities for use by residents, either for individual households or as communal forest, along with land use certification to ensure continuing legal tenure. Another type of civil society organization, rural development centers at Vietnamese universities, can also provide expertise for training resettlers in new agriculture techniques and can advocate for land reallocation, drawing on their strong and established ties with local officials.

In Chapter 2 the author posed four research questions for the case study; based on the abovementioned findings their responses can be summarized as follows:

1. What factors impede successful adaptation and improved livelihoods and living conditions? (Chapter 3) *Inadequate land provision, poor access to common resources and poor participation in decision-making were the most serious impediments.*
2. How could the DPs autonomously act to improve community resilience after resettlement? (Chapter 4) *They drew on strong social and cultural capital to improve their living conditions but were unable to improve livelihoods due to poor natural, human and financial capital.*
3. How could the benefits from the hydropower dam be shared with the DPs? (Chapter 5) *The reservoir management and hydropower authority could allow access to reservoirs to enhance livelihoods and pay residents for environmental services.*
4. How roles can internal and external stakeholders play to improve long-term sustainability for dam-displaced villagers in Vietnam? (Chapter 6) *Based on a stakeholders' analysis summarized in Table 7.2 and explained below, each stakeholder can apply their unique strengths and expertise if institutionally included in resettlement planning.*

As can be seen in the stakeholder analysis chart below (Table 7.2), each stakeholder has discrete strengths and limitations to the role it can play in resettlement, and its resources and activities vary widely. By understanding the resources that each can draw on and the core interests that motivate

their involvement, resettlement planners can involve a number of stakeholders effectively to overcome inherent challenges such as insufficient land or limited human capital. While more research needs to be done in Vietnam concerning the positive impact of IFI and NGO involvement in post-resettlement adaptation, it is clear that these external stakeholders can help to compensate for perceived shortcomings in local government expertise and inadequate land allocation. In brief, the residents can draw on strong social and cultural capital but have limited ability to improve livelihoods, while the local government understands and prioritizes residents' concerns but lacks training in resettlement and has little budget for land acquisition. The reservoir management can promote benefit-sharing mechanisms but may lack clear lines of authority in Vietnam. The hydropower authority's inherent interest in profit maximization may preclude acting in the best interests of DPs, but their inclusion in PES schemes is valuable source of additional income. International financial institutions that invest in dam projects may promote high compensation payments, participation in decision-making and women's empowerment in line with their organizational objectives and safeguards, but they may have poor local relations and priorities that differ from those of the DPs themselves. Vietnamese civil society organizations, on the other hand, can act as trusted advocates for DPs, with long-standing local ties and expertise, but they may suffer from weak institutional and funding capacity.

Table 7.2. Analysis of stakeholders' roles in post-resettlement adaptation and development

Stakeholder	Examples of activities and initiatives	Functional role	Strengths	Limitations	Core interests	Resources
Residents	Mutual help; diversification of crops and income sources; extensification of cropland	Beneficiaries of support	Robust social and cultural capital; strong social networks	Poor financial and human capital; degraded natural capital	Improved livelihoods and living conditions	Indigenous skills, community social networks
Local government	Agricultural training; financial support for vulnerable HHs	Determining compensation, providing livelihood support	Understands local conditions, residents' concerns	Poorly trained in resettlement, limited budgets, difficult to procure replacement land	Reducing conflict and resistance; improving livelihoods	State authority; mass organizations; support systems
Hydropower authority	Payment for forest environmental services	Funding for PFES, livelihood support	Sustainable income source (hydro tax)	Adverse to increasing payouts	Watershed maintenance	Hydroelectric generation income
International financial institutions	Social inclusion and livelihood support initiatives	Ensuring compliance with involuntary safeguards	Funding, authority, central government backing, external resources	Dominate local power relations	Compliance with safeguards	Extensive financial resources and expertise; global network
Vietnamese NGOs	Livelihood training; holding social inclusion and business skills workshops	Advocacy for residents; livelihood training and support	Strong local ties and experience; knowledge of local conditions and society	Limited financial resources and technical expertise	Successful project outcome: Improved livelihoods and local credibility	ODA and INGO funding; prior ties with local govt.
Vietnamese universities	Training in crops, livestock; proposing forest land reallocation	Livelihood training and support	Technical expertise, strong local presence and govt. ties	Limited financial resources; poor continuity	Publishable or presentable project results	ODA and INGO aid; prior ties with local govt.

7.2. Recommendations for resettlement planning

Based on the above findings for the case study, the following recommendations are provided in order to achieve more inclusive and effective resettlement planning in Vietnam. It should be noted that

because dam projects throughout the developing world largely affect indigenous ethnic minorities and report similar challenges to achieving positive outcomes, many of these recommendations could also be relevant for resettlement planners in other nations.

1. Minimize or avoid dam-forced relocation when possible and require environmental and social impact assessments before dam construction and resettlement activities begin.
2. Practice integrated lake basin management that anticipates social and environmental impacts of resettlement and provides for sharing the benefits of hydroelectric generation and reservoir water impoundment, including electricity provision, irrigation, reservoir access for livelihoods or payment for environmental services schemes.
3. Integrate awareness and promotion of indigenous skills, land use, and other practices in resettlement planning to enhance community resilience and use resources more effectively. For example, allocation of agricultural land should conform to traditional forest use beliefs, including protection of "sacred forest" areas, and residents should be allowed to apply their construction skills by building culturally appropriate housing by themselves.
4. Support maintenance of cultural practices, rituals and culturally significant construction in order to maintain strong ethnic identity and social cohesion in ethnic minority communities
5. Support participation, land reallocation, and livelihoods by including multiple stakeholders in resettlement planning from the start of the dam project. Government resettlement planning guidelines should require that local government identify one domestic NGO as the lead civil society partner in the project. Ensure that residents and NGOs are embedded in local institutional bodies such as the compensation and reservoir management boards.
6. Establish a resettlement implementation unit at the village level that includes village leaders, ordinary residents and NGO representatives to make decisions on development spending, site selection, land use, livelihood training, health and welfare programs and other initiatives.

Hydropower dams not only profoundly alter the flow of the rivers they intersect; they also profoundly alter the lives of those living on the land they claim. Through the process of displacement and resettlement, as noted by Jacques Leslie (2005, p. 203), the dam creates need "where before none existed," requiring some kind of development initiative as the response to that need. Many of the weaknesses in resettlement implementation identified in this thesis can be found in many other countries besides Vietnam that are now actively engaged in hydropower dam construction. An integrated approach that draws on the expertise and varying objectives of a range of stakeholders can help to overcome common problems such as lack of suitable replacement land and poor local governance and provide opportunities for affected populations to secure a voice in the development process.

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APPENDIX A. HOUSEHOLD SURVEYS

A1. Household surveys administered in Aden and Tro Gung (n=120)

Họ và tên chủ hộ (Owner's name): Village: □Ađền □Trờ gưng

1. Các câu hỏi chung –General information

	Các vật dụng gia đình/Furniture	Có/ yes	Số lượng/ Quantity	Không /No	Hiện có sử dụng không? Use or not
1	Ti vi-television				
2	Xe máy-Automobile				
3	Xe đạp – Bike				

2. Thông tin hộ gia đình (Family personal information)

STT No.	Họ và Tên/ Full name (*)	Quan hệ/ Relationship	Tuổi/ Age	Trình độ văn hoá/ Education	Công việc/ Career

3. Các nguồn thu nhập của gia đình (Family's income)

No. STT.	Nguồn thu nhập Income source	Số lượng Quantity	Trung bình/tháng Average income	Tổng/năm Total/Year
1	Bán chuối – Banana production			
2	Trồng lúa – Rice production			
3	Bán củi- Firegood			
4.	Trồng sắn- cassava production			
5	Chổi đót			

4. Đất đai hiện có (Recent having land)

STT. No.	Loại đất/Type of land Type of land	Diện tích/ Square	Khoảng cách/distance	Năm canh tác thứ	Sản lượng/ Yield	Giá bán/ Selling price
1	Ruộng nước- Paddy filed					
2	Rẫy – Terrace field					
3	Vườn gần nhà – Garden					

5. Chăn nuôi –Husbandary: Hiện nay/ Recent

STT/No.	Con gì?/ Kind of animal	Số lượng/ Quantity	Mục đích/ Purpose	Bán/Sell How much?	Ăn

6. Health

Tên/Name	Bị bệnh/sick	Thời gian bị/how long

7. Nutrition

STT/No.	Thực phẩm sử dụng- Food	Số lượng/ngày Quantity/day	Số lượng/tháng Quantity/month	Nguồn/ Source
	Gạo-Rice			
	Ngô- Corn			
	Rau rừng –wild vegetable			

8. Knowledge and skill

STT-No.	Có thể làm việc gì? Which skill?	Ai làm? Who	Thu nhập? Income
1			
2			

9. .Các khoản tiền phải chi tiêu hàng tháng – Monthly expenses

STT/No.	Các khoản chi - Expenses	Tháng - Monthly	Tổng/Năm- Total/year
1	Tiền điện- Electicity		
2	Xăng-Gasoline		

10. Tiền tiết kiệm – Saving money

STT/No.	Tiền tiết kiệm /Saving money	Số tiền/ Amount	Nguồn gốc (source)
	Hiện có trong ngân hàng-		

10. Các câu hỏi có liên quan khác – Other questions

1. Where did you live before coming to this village?
2. How do your current living standards compare with your life before resettlement?
3. What was better in your old village than this one?
4. Did you receive financial compensation for your previous land and assets when you were resettled? If say yes, let see 6; If say no, let see 7
5. If yes, how much?
6. How did you use the money?
7. If no, do you know why you didn't receive it?
8. Did you know before you would be resettled?
9. Did you participate in pre-resettlement meetings?
10. How many meetings did you join or know about?
11. Do you live near the same people you lived near before resettlement?
12. Did you choose where to live?
13. Do most people in the village get along better or worse than before resettlement? Why?
14. Is everyone in the village pretty much the same in terms of household income or assets? Has this changed since resettlement?
15. Do you know who the wealthiest or most influential families are? Who are the poorest families – those with women household heads?
16. Since you moved, did you receive any training in new agricultural techniques, such as livestock management or cultivating new crops?
17. If have, what have been taught?
18. Has your toilet or the stairs in your house been broken?
19. If yes, was it repaired?
20. Did you receive compensation?
21. How much did you receive?
22. Are you member in Women Union or Farmer Union in the village?
23. What is your position in the union?
24. How often do the meeting hold?
25. How does the union help you?
26. Did you do hunting before moved to Cutchrun?
27. If yes, how often?
28. After moved to Cutchrun, do you continue to go for hunting?
29. If yes, how often?
30. When you don't go to hunt, what do you do?

31. When do you need money (cash) for funeral, wedding or etc., who you can ask for the money?
32. Do you know any traditional production?
33. If yes, what can you produce?
34. What are you waiting for your future?

A2. Survey on social and cultural capital, administered in Aden and Tro Gung (n=18)

1. Has your toilet been broken? Yes No
2. If yes, what did you do? A. Fixed by me or family member B. Fixed by other villager C. Paid outsider to fix D. No longer use
3. If you have a major family problem, who would you consult with? Rank in order __
   A. Other relatives
   __ B. Neighbors
   __ C. Headman/vice-headman
   __ D. Elder
   __ E. Would deal with it myself/ourselves
4. When there is a major village-level problem, such as broken water pipes or a land dispute what happens?
   __ A. Headman goes to commune/district
   __ B. Try to solve ourselves
   __ C. Ask elders for advice
   __ D. Other _____
5. Can you give an example of the village organizing to solve a problem in recent years (e.g. poor roads, lack of money for Tet)?
   _____
   _____
6. Besides the headman and vice-headman, are there other leaders in this village who people listen to? _____
7. Why do people listen to them? _____
   _____
8. Are the Farmer's Union and Women's Union active in helping solve people's problems? Can they represent villagers to the government?
9. Do the villagers generally trust one another to loan or borrow money?
   ___ Yes
   ___ No
10. What are the biggest problems for this village, in order of importance:
    ___ Poor soil and productivity
    ___ Poor food security
    ___ Housing is poor
    ___ Children's education

___ Lack of livelihood opportunities

___ Personal conflicts

___ Other: _____

11. Are there differences that divide people in the village, such as age, gender, or wealth? Have there been any serious conflicts? _____
12. If someone in the village doesn't have food for their family or has serious health problems, who helps him/her (list in order)?

    __ Relatives

    __ Friends

    __ Close neighbors

    __ Collective organizations (Women's Union, Fatherland Union, etc.)

    __ Ask for government help
13. If you could choose, would you want to be born as Kinh or Co-tu? Explain your reasons.

    __ Kinh because _____

    __ Co-tu because _____

    __ Either one/no preference because _____

    _____
14. Do you think that there is any difference in ethnic pride or practicing Co-tu traditions between generations (elderly/middle-aged/young)? What is different?

    _____

    _____
15. Would you leave this village if you thought you could find work in another town or city? Yes No Explain your reasons _____

    _____
16. Imagine a ladder with steps numbered from O at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time? _____
17. On which step did you stand in the previous village before resettlement? _____
18. On which step do you think you will stand about five years from now? _____

--END

APPENDIX B. SELECTED SURVEY RESULTS

B1. Household surveys results, analyzed using SPSS software

1. Household size and education

	N	Minimum	Maximum	Mean	Std. Deviation
Years of education for household head, spouse	58	0	12	5.74	2.679
Family size	120	1	9	4.72	1.529
Valid N (listwise)	58				

2. Household income

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Sources of income	116	96.7%	4	3.3%	120	100.0%

Sources of agricultural/NTFP income				
		Responses		Percent of Cases
		N	Percent	
Sources	Banana production	102	25.1%	87.9%
	Rice production	116	28.6%	100.0%
	Firewood	4	1.0%	3.4%
	Cassava production	109	26.8%	94.0%
	Straw broom	73	18.0%	62.9%
	Pineapple production	2	.5%	1.7%
Total		406	100.0%	350.0%

Descriptive Statistics					
	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Income from banana production (bunches/year)	*118*	*0*	*38*	*10.87*	*7.817*
Income from rice production (crocks/year)	*118*	*0*	*95*	*52.65*	*21.257*
Income from firewood (VND/year)	*118*	*0*	*500000*	*10169.49*	*59037.625*
Income from cassava production (VND/year)	*117*	*0*	*2000000*	*349316.24*	*254922.999*
Income from straw broom (VND/year)	*118*	*0*	*700000*	*127347.46*	*133316.626*
Income from pineapple production (VND/year)	*118*	*0*	*200000*	*2542.37*	*20514.179*
Valid N (listwise)	*117*				

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Income from banana production (bunches/year)	118	0	38	10.87	7.817
Income from rice production (crocks/year)	118	0	95	52.65	21.257
Income from firewood (VND/year)	118	0	500000	10169.49	59037.625
Income from cassava production (VND/year)	117	0	2000000	349316.24	254922.999
Income from straw broom (VND/year)	118	0	700000	127347.46	133316.626
Income from pineapple production (VND/year)	118	0	200000	2542.37	20514.179
Valid N (listwise)	117				

3. Land use

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Size of paddy fields (square meters)	118	0	1000	529.75	298.984
Size of upland fields (ha)	118	.0	3.0	1.477	.5783
Size of garden (square meters)	118	0	900	317.12	273.380
Size of forest land (square meters)	118	0	20000	222.03	1893.046
Valid N	118				

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Yield of paddy fields (crocks/year)	118	0	60	3.12	7.271
Yield of upland fields (crocks/year)	118	0	95	49.96	21.024
Yield of homegarden (banana bunches/year)	65	0	40	11.86	10.311
Yield of forest land	98	0	0	.00	.000
Valid N (listwise)	63				

4. Livestock

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Number of pigs	118	0	4	.39	.868
Number of chickens	118	0	17	1.07	2.688
Number of ducks	118	0	11	.45	1.545
Number of dogs	118	0	4	.24	.663
Number of cows	118	0	2	.06	.301
Number of buffalo	118	0	2	.02	.184
Valid N	118				

5. Health

HealthProb Frequencies				
		Responses		Percent of Cases
		N	Percent	
Health problems	Toothache	4	10.0%	17.4%
	Arthritic	7	17.5%	30.4%
	High blood pressure	1	2.5%	4.3%
	Stomach	1	2.5%	4.3%
	Deaf	2	5.0%	8.7%
	Kidney	4	10.0%	17.4%
	Paralysis	2	5.0%	8.7%
	Disable	1	2.5%	4.3%
	Backache	2	5.0%	8.7%
	Cough	2	5.0%	8.7%
	Epilepsy	1	2.5%	4.3%
	Thoracic	1	2.5%	4.3%
	Sinusitis	1	2.5%	4.3%
	Asthma	2	5.0%	8.7%
	Colitis	2	5.0%	8.7%
	Gout	1	2.5%	4.3%
	Colic	1	2.5%	4.3%
	Myopia	1	2.5%	4.3%
	Heart attack	1	2.5%	4.3%
	Chest pain	1	2.5%	4.3%
	Dizzy	1	2.5%	4.3%
	Depression	1	2.5%	4.3%
Total		40	100.0%	173.9%

6. Nutrition

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Amount of rice per household (kg)/day	108	.50	3.75	1.5611	.58090
Valid N	108				

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Amount of rice per person (kg)/day	108	.13	1.88	.3466	.17382
Valid N	108				

7. Income from other sources

Case Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
$Skill[a]	73	60.8%	47	39.2%	120	100.0%

Non-agricultural income				
		Responses		Percent of Cases
		N	Percent	
Skill[a]	Husking acacia	8	7.5%	11.0%
	Construction work	13	12.1%	17.8%
	Disability payments	17	15.9%	23.3%
	Secretary	1	.9%	1.4%
	Harvesting cane	31	29.0%	42.5%
	Security guard	4	3.7%	5.5%
	Village staff	12	11.2%	16.4%
	Teacher	1	.9%	1.4%
	War veteran pension	1	.9%	1.4%
	Trading	4	3.7%	5.5%
	Disabled veteran payments	7	6.5%	9.6%
	Dioxin victim payments	3	2.8%	4.1%
	Retirement pension	5	4.7%	6.8%
Total		107	100.0%	146.6%

8. Monthly household expenses

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Electricity (VND)	117	0	150000	37914.53	24844.889
Gasoline (VND)	117	0	1000000	127735.04	155977.861
Rice	114	0	650000	125657.89	173696.808
Meat (kg)	115	0	5	.56	1.045
Cooking oil (VND)	114	0	150000	25201.75	24221.390
Valid N	112				

9. Savings

	N	Minimum	Maximum	Mean	Std. Deviation
Amount of savings (VND)	4	10,000,000	300,00,000	2,000,000,000	11,547,005.384
Valid N (listwise)	4				

10. Village origin

Statistics		
Responded re. village		
N	Valid	90
	Missing	30

Previous village					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Aden	52	43.3	57.8	57.8
	2 Tro Gung	17	14.2	18.9	76.7
	3 Ta Reng	21	17.5	23.3	100.0
	Total	90	75.0	100.0	
Missing		30	25.0		
Total		120	100.0		

11. Comparing original and current village living standards

Statistics		
Living standards		
N	Valid	111
	Missing	9

Living standards					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Better	3	2.5	2.7	2.7
	2 Same	63	52.5	56.8	59.5
	3 Worse	45	37.5	40.5	100.0
	Total	111	92.5	100.0	
Missing		9	7.5		
Total		120	100.0		

Note: Among respondents choosing “equivalent,” several explained that areas of improvement, such as infrastructure and convenience, were balanced by conditions that had worsened.

Case Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Reason	118	98.3%	2	1.7%	120	100.0%

12. Compensation amounts

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Compensation in cash (million VND)	95	0	150	21.88	26.351
Compensation in both cash and house (million VND)	95	75.0	225.0	96.481	26.3939
Valid N (listwise)	95				

13. Village relations

Statistics			
		Do most people in the village get along better or worse than before resettlement	Is everyone in the village pretty much the same in terms of household income or assets? Has this changed since resettlement?
N	Valid	119	120
	Missing	1	0

Do most people in the village get along better or worse than before resettlement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Better	2	1.7	1.7	1.7
	2 Similar to before	117	97.5	98.3	100.0
	Total	119	99.2	100.0	
Missing	System	1	.8		
Total		120	100.0		

14. Relative financial inequality

Is everyone in the village pretty much the same in terms of household income or assets? Has this changed since resettlement?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 Different	54	45.0	45.0	45.0
	1 More of less the same	66	55.0	55.0	100.0
	Total	120	100.0	100.0	

Case Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Reasons	32	26.7%	88	73.3%	120	100.0%

Reasons for differences and frequencies				
		Responses		Percent of Cases
		N	Percent	
Reasons	Differences in property but not income	4	12.5%	12.5%
	Different. People who have salaries will gain a good life.	2	6.2%	6.2%
	Different. A healthy and smart man will get a higher income	9	28.1%	28.1%
	Different levels but mainly poor	1	3.1%	3.1%
	Different; those who receive payment will have a fuller life.	1	3.1%	3.1%
	Different. Those in good health will be able to have higher household income.	2	6.3%	6.3%
	Changed since resettlement	7	21.9%	21.9%
	There are differences in wealth in the village	1	3.1%	3.1%
	Different; the young receive more money than older people.	1	3.1%	3.1%
	There are differences between rich and poor.	4	12.5%	12.5%
		32	100.0%	

15. Is membership in a mass organization helpful to you?

Organization membership is beneficial					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	68	56.7	58.6	58.6
	1 Yes	48	40.0	41.4	100.0
	Total	116	96.7	100.0	
Missing	System	4	3.3		
Total		120	100.0		

16. Hunting

Did you often go hunting before you moved to Cutchrun?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	103	85.8	85.8	85.8
	1 Yes	17	14.2	14.2	100.0
	Total	120	100.0	100.0	

Do you continue to hunt after moving to Cutchrun?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 No	111	92.5	93.3	93.3
	1 Yes	8	6.7	6.7	100.0
	Total	119	99.2	100.0	
Missing	System	1	.8		
Total		120	100.0		

17. Borrowing money

Case Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Borrowing money	119	99.2%	1	.8%	120	100.0%

If you need money for a wedding or funeral, whom can you borrow from?				
		Responses		Percent of Cases
		N	Percent	
Money Borrow[a]	Borrow from my relative	116	55.0%	97.5%
	Borrow from bank	91	43.1%	76.5%
	Borrow from neigbours	4	1.9%	3.4%
Total		211	100.0%	177.3%

B2. Selected responses to social and cultural capital survey (N=17)

Responses to Ladder of Life questions (Nos. 15-17)					
Question	No. of responses (n)	Minimum	Maximum	Mean	Standard deviation
15-today	16	1	7	4	1.76
16-future	14	1	8	4.1	2.16
17-past	17	2	8	4.8	1.45

Responses to questions with ranked answers					
Question	n.	Most frequent	second	third	fourth
#3 Consult with for family problem	17	Take care of ourselves	Other relatives	Village elder	Village headman
#4 Action taken for village problem	17	Headman asks local officials	Small issues - try to solve ourselves	Hold village meeting to discuss	Ask elders for advice
#9 Greatest village problems	17	Poor soil limits production	Lack of livelihood opportunities	Poor water supplies	Housing is poor
#11 Helping family with money, health problems	17	Relatives	Close neighbors	Mass orgs. (Farmers' Union, etc.)	Ask for government help

APPENDIX C. SUPPLEMENTARY TABLES AND FIGURES

Table C1. List of livelihood assets among villagers in Ma Cooih commune

Livelihood Assets		
Category	*Contents*	*Ma Cooih*
Human capital	*Health*	*Has improved with more access to health care, less malaria; rely on medicinal foods for minor problems*
	Nutrition	*Food insecurity might mean more malnutrition*
	Education	*Children finish elementary school - improved; many go to jr. high but far away so many can't continue*
	Knowledge and skills	*Shifting cultivation, livestock, basketry, NTFP, fishing, hunting*
	Capacity to work	*Manual labor available, but reluctant to leave village, work on demanding dam-related jobs*
	Capacity to adapt	*Can adapt for living conditions but not livelihoods*
Natural capital	*Land and produce*	*Poor land; decline in cultivation, livestock, wildlife, NTFPs, fish*
	Water and aquatic resources	*Far from A Vuong; fisheries decline*
	Trees and forest products	*Trees have been logged; NTFPs declined*
	Wildlife	*Prohibited from hunting big game; wildlife reduced*
	Wild foods and fibres	*Depend on wild vegetables and other foods, but harder to find than before*
	Biodiversity	*Logging and burning forest has reduced biodiversity*
	Environmental services	*New program for forest protection may provide more financial security but reduces possibilities for NTFBs*
Social capital	*Networks and connections*	*Village is strongest connection; family has become stronger*
	Relations of trust and mutual support	*Rely on families and neighbors*
	Formal and informal groups	*Women's Union, Farmers' Union, etc. support, but less important than informal networks*
	Common rules and sanctions	*Traditional prohibitions on sacred areas (burial grounds) or evil areas are maintained*
	Collective representation	*Village heads, elders are respected*
	Mechanisms for participation in decision-making	*Frequent meetings but not real participation; village heads and elders make decision*
	Leadership	*Village heads, elders, heads of formal groups, former government*

		officials
Physical capital	*Infrastructure - transport and roads*	*Roads improved so easier access to towns*
	Electricity	*Now everyone has electricity but rates are high; biggest financial burden*
	Shelter and buildings	*Houses have been repaired and renovated to make more livable; traditional homes built. Community house plays important role in village functioning and identity*
	Water supplies and sanitation	*Water supplies often fail; toilets supplied but most are broken*
	Energy	*Firewood collected often from forest; burden on women's time. Petroleum for motorbikes is financial burden so limits mobility*
	Communications	*Young people have keitai but no access from village*
	Tools and technology - for production	*Rudimentary*
	Seeds, fertilizer, pesticides	*Few seeds or agrichemicals are available; little knowledge of green agricultural techniques*
	Traditional technology	*Slash and burn techniques still applied, despite prohibition*
Financial capital	*Savings*	*Most families have spent compensation funds; little savings remain*
	Credit/debt - formal, informal, NGOs	*Some farmers have taken bank loans for livestock. Most borrow from relatives for weddings or important expenditures*
	Remittances	*A few people receive veterans or government remittances*
	Pensions	*Pensions are main source of outside income; differentiates poor from near-poor*
	Wages	*Some income from manual labor, illegal logging. Otherwise income is irregular from sales of produce to traders*

Table C2. Significant community capital indicators from household survey

Capital Assets	Includes	Indicators (based on survey responses)
Human capital	Health, nutrition, education, knowledge and skills, capacity to work, capacity to adapt	Mean years of education for HH head and spouse (5.7); Nutrition: average amount of rice per person (347 grams per day). Some training in livestock production and new crop cultivation.
Social capital	Networks and connections, relations of trust and support (bonding), formal and informal groups, leadership, shared values	Borrow from relatives 55%, bank 43%, neighbors 1.9% From individual interviews (n=17): For family problems: 1. resolve themselves, 2.. consult relatives 3. consult headman. For village problems: 1. hold village-wide meeting 2. headman and village leaders decide. Most authoritative: 1. village elder 2. village Communist party secretary. Village relations have stayed the same since resettlement 98.3% .
Natural capital	Land, crops, water, forest resources, wildlife, biodiversity, environmental services	Average plot size: paddy 0.53 ha, upland fields 1.48 ha, homegarden 0.32 ha, forest 0.22 ha. Total 2.55 ha. Livestock: 1.07 chicken per HH, followed in frequency by ducks, pigs and dogs (less than one per HH). Greatest problems: 1. Insufficient land quantity, quality 2. Irrigation for rice fields 3. Livestock morbidity 4. Water supplies in dry season
Physical capital	Infrastructure, tools and technology, household assets	Post-resettlement living conditions: Better 2.7% equivalent 56.8%, worse 40.5%. Improved, in order of frequency: roads, schools, electricity, access to towns. Hope to receive more land, livestock, access to reservoir for fishing
Cultural capital	Indigenous practices, rituals, shifting cultivation, crafts, construction, identity	Can dance or sing in traditional style 4.7%. From individual interviews (n=17): 10 would prefer to be Kinh, due to financial and educational opportunities; 8 prefer Co-tu due to ethnic pride, familiarity, no choice (one person listed both).
Financial capital	Savings, credit and debt, remittances, pensions, wages	Sources of farm income, in order of amount: cassava, broom thatch, firewood, pineapple. Non-farm income: field labor, disability pensions, construction, village official, veterans' pensions. Only 4 have savings, averaging 20 million VND. Mean total HH monthly income: 660,614 VND. Poor 116 HHs (92.8%), near poor 9 HHs (7.2%)

Figure C.1. Hand-drawn map of Aden before resettlement (2013)

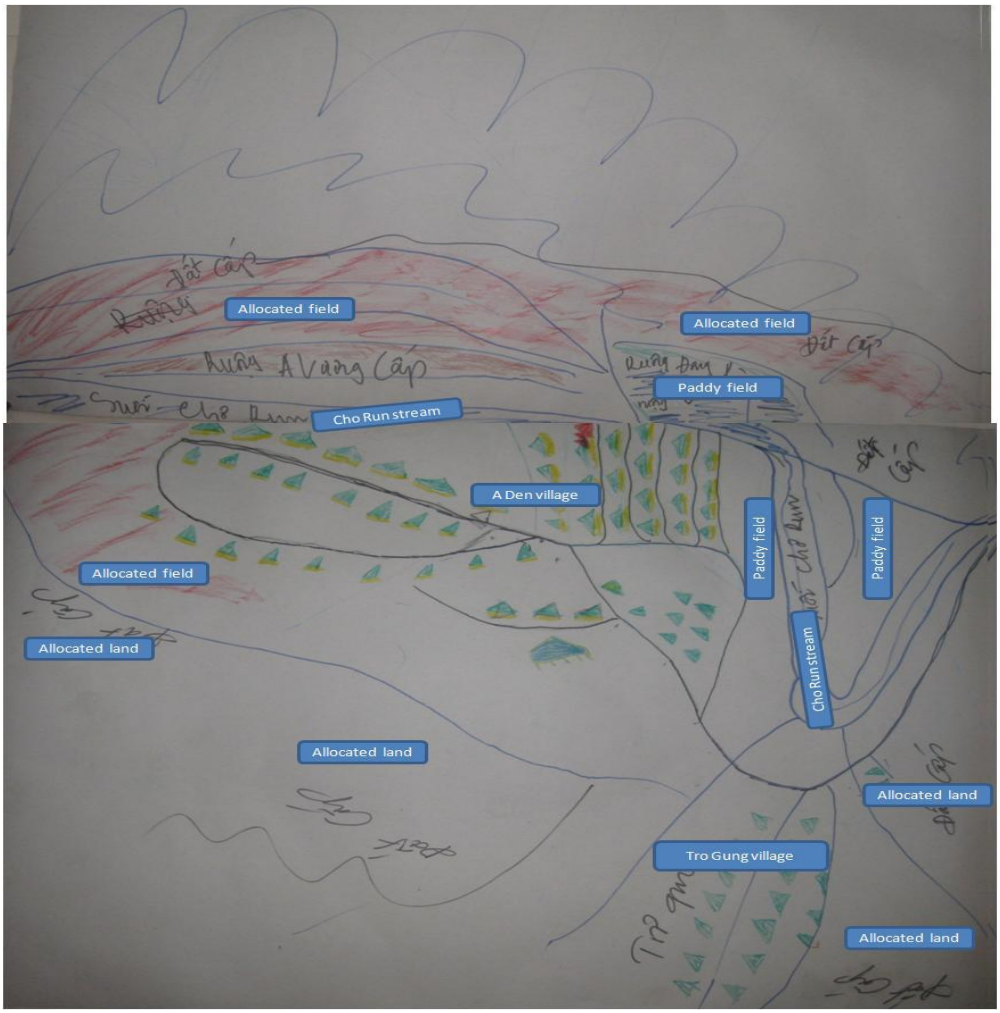
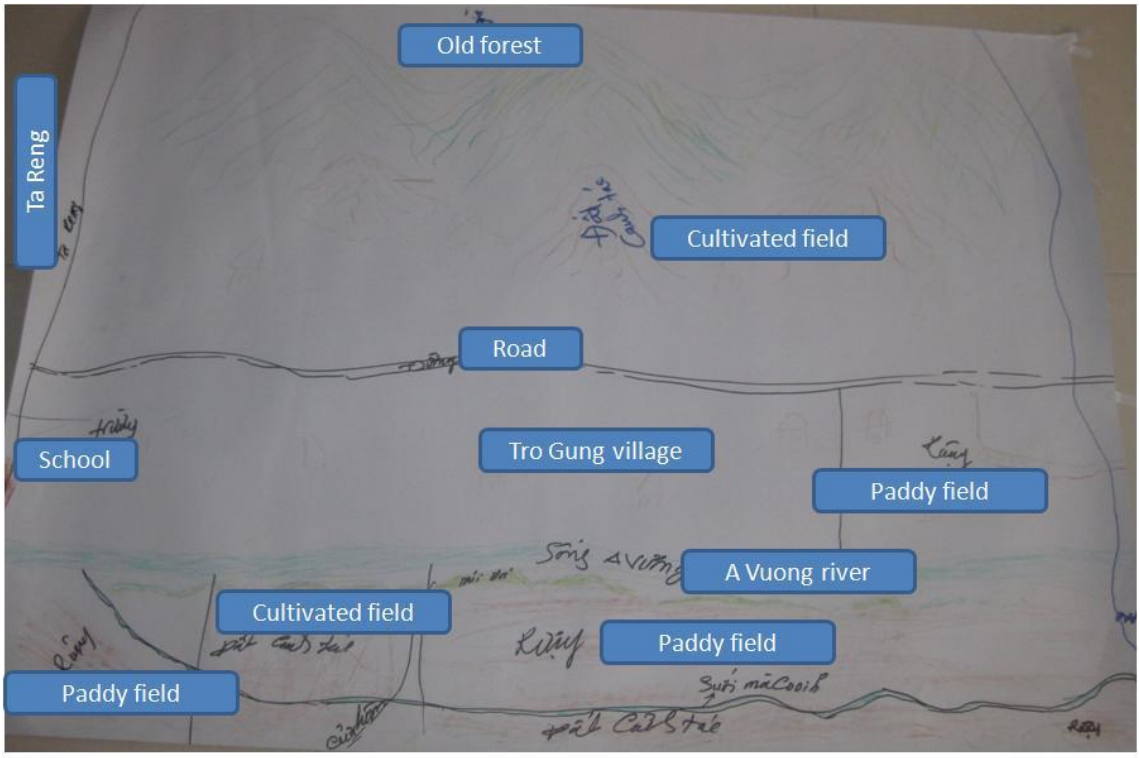


Figure C.2. Hand-drawn map of Aden after resettlement (2013)



Tro Gung village before resettlement

Tro Gung village after resettlement

Figure C.3. Hand-drawn maps of Tro Gung before and after resettlement (2013)